

# **Oral Health: Approaches for general dental practice teams on promoting oral health**

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## **Final Report**

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## Executive Summary

This report presents the results of a review of the evidence about oral health promotion in order to inform practice and policy in dental surgeries in the UK.

### Aim

The aim of the review was to identify, critically appraise, and synthesise the available evidence, in order to determine the circumstances in which oral health promotion is at its most effective. The research question that guided the analysis of the data was: **Is oral health promotion effective and how can its effects be optimised?**

In order to address this question the following questions were formulated:

- Does the application of behavioural and psychological theory to oral health behaviour lead to effective oral health promotion interventions?
- What is the most effective mode of delivery (channel) of oral health promotion?
  - Is verbal delivery of oral health promotion effective?
  - Is delivery of oral health promotion by leaflet/written material effective?
  - Is delivery of oral health messages by means other than verbally/ in writing effective?
- What is the content of oral health messages and how does content influence effectiveness?
- What is the influence of 'receiver' characteristics on the effectiveness of oral health promotion?
- What influence do 'sender' characteristics have on the effectiveness of oral health promotion?
- What influence does framing have on the effectiveness of oral health promotion messages?
- What are the barriers and facilitators to effective oral health promotion?
- What factors affect patient satisfaction and motivation after a dental visit?
- Are oral health promotion messages more likely to have an effect on patients if they are linked to wider health outcomes?

### Methods

A search of bibliographic databases was used to identify any primary research, irrespective of study design, which related to oral health messages, delivered to an adult or child, in relation to the context of a dental practice. Twenty-four databases including those that capture the grey literature were searched for relevant primary research including both quantitative and qualitative designs. Initially, titles and abstracts were screened for relevance; full papers were obtained for those articles that fulfilled the inclusion criteria, or where the abstract lacked clarity and thus could not be excluded. Each included study was subjected to data extraction and quality assessment, and relevant information from each study was recorded in an evidence table.

We also used our professional networks and contacts, including the British Dental Association, to issue a 'Call for Evidence' in order to ensure that any current or recently completed relevant research would be included in the review. In addition, we also hand-searched the references of three relevant systematic reviews, to ensure no studies were overlooked.

Studies were grouped according to the evidence they offered in relation to the research questions. The evidence was synthesised after considering the studies' homogeneity, quality and applicability and studying the evidence tables. The intention was to meta-analyse data from studies with comparable interventions and outcome measures. Evidence was considered strong if more than one study rated (++) or more than one Randomised Controlled Trial (RCT) rated (+) reported an effect. Evidence for a finding was considered moderate if supported by more than one non RCT study rated (+), and evidence was considered weak if it was supported only by studies considered to be of low quality (-).

## Results

In the main review, 44 studies reported in 52 papers were included. Fifteen of the studies were RCTs, two were cluster RCTs, and one was a controlled trial. Also included were five quasi-experimental studies, two before-and-after studies without control groups, three surveys, eleven qualitative studies, three mixed methods studies, one audit and one pilot study.

Two of the RCTS were high quality (++) , ten were rated as moderate quality (+) and three were rated (-). Both cluster RCTs were of moderate quality (+) and the controlled trial was rated (-). Of the qualitative studies, three were appraised as high quality (++) and the remaining eleven (which includes the qualitative parts of the three mixed methods studies) were appraised as moderate quality (+). The before and after studies, quasi-experimental, audit, pilot and survey studies were all rated (-) apart from one quasi-experimental study which was high quality (++) , and one survey which was methodologically sound (+).

The evidence was very disparate and the quality of reporting was highly variable. Many studies relied on patient-reported behaviour rather than objective clinical measures or observed behaviours. Many had short follow up periods. Similarly, it was not possible to undertake any meta-analyses, as the homogeneity of the interventions and outcomes were insufficient, or the outcomes were measured in units that could not be translated into behavioural or health outcomes. Graphical representation of such heterogeneous findings was considered inappropriate.

The heterogeneity of the populations studied, the settings and the outcomes measured in the reviewed studies did not allow overall definitive conclusions to be drawn regarding a single "best" way to deliver oral health promotion. Therefore, very careful consideration was given to determining how best to group the studies in order to provide meaningful evidence statements that could guide the development of future recommendations.

Our search strategy revealed a considerable number of studies focussing on the delivery of smoking cessation advice. The majority of the smoking cessation studies identified were not specifically about promoting oral health per se. It was therefore decided, in consultation with the Centre for Public Health (CPH) team, that while we would endeavour to undertake a brief narrative synthesis in order to be able to make a "state-of -the-art" statement about smoking cessation advice via dental surgeries, this would not be part of the main review.

## Conclusions

- There is strong evidence that oral hygiene and gingival health can be improved by using psychological behaviour change models as the basis of the intervention.
- There is strong evidence that patients' knowledge levels can be improved by receiving oral health messages from an oral health practitioner.
- There is strong evidence that leaflets and written material are effective in promoting patients' knowledge but there is no evidence that leaflets are effective for changing people's behaviour.
- There is strong evidence of the existence of a number of barriers and facilitators to the successful delivery of oral health promotion in the dental surgery.
- There is moderate evidence that patient motivation and satisfaction are dependent on the oral health professional's communication skills and ability to build therapeutic alliances with their patients.
- There is moderate evidence that the nature (but not the professional role) of the 'sender' of oral health promotion messages and their attitudes and beliefs about oral health promotion can act as either a barrier or facilitator to effectiveness.
- There is weak evidence that improvements in knowledge lead to improved oral health behaviour, at least in the short term.
- There is no evidence available regarding the effectiveness of linking oral health promotion messages to wider health outcomes.

The evidence statements below have been derived from the analysis of the available data:

### Application of behavioural and psychological theory

#### Evidence Statement 1

There is strong evidence from five RCTs reported in seven papers (2++, 2 +, 1-) <sup>1,2,3,5,6,7,8</sup>, two quasi experimental studies <sup>4,9</sup> (1++, 1-), and one qualitative study published in two papers <sup>10,11</sup> (+) to suggest that the use of behavioural and psychological theoretical models in the development of oral health promotion interventions, results in improved oral hygiene and gingival/periodontal health. One randomised controlled trial <sup>1-3</sup> (++) testing an oral health promotion programme based on a cognitive behavioural approach, showed a mean gain score difference of 0.27 for the Gingival Index in the intervention group (99.2% confidence interval (0.16) – (0.39),  $p<0.001$ ). Another RCT <sup>5</sup> (++) which tested an intervention based on an autonomy-supportive approach also showed significant effects on plaque reduction (effect size -0.86, 95% confidence interval (0.81) – (0.91)) and gingivitis (effect size -1.21, 95% confidence interval (-1.18) – (1.24)). Changes in positive behaviour were also reported in a quasi-experimental study investigating the role of cognitive behavioural therapy <sup>9</sup> (++)

and a qualitative study applying the transtheoretical model of behaviour change<sup>10-11</sup> (+). These studies did not show changes in objectively measured dental health.

This evidence is applicable to people in the UK because all of the studies were conducted in circumstances which prevail in the UK and the models used to develop the interventions are apposite to UK populations.

<sup>1,2,3</sup>Jonsson et al. 2009, 2012, 2010 (++)

<sup>4</sup>Jonsson et al. 2009 (-)

<sup>5</sup>Munster Halvari et al. 2012 (++)

<sup>6</sup>Kakudate et al. 2009 (+)

<sup>7</sup>Clarkson et al. 2009 (+)

<sup>8</sup>Little et al. 1997 (-)

<sup>9</sup>Fjellstrom et al. 2010 (++)

<sup>10</sup>Kasila et al. 2006 (+)

<sup>11</sup>Kasila et al. 2008 (+)

## Verbal delivery of oral health promotion

### Evidence Statement 2

Two RCTs (reported in three papers) carried out in Sweden and Finland<sup>12,15,19</sup> (1+, 1-) showed that oral health promotion delivered verbally by dental health professionals improved adult and child patients' knowledge levels, and reported behaviours. However a cluster RCT in the UK involving young children<sup>13</sup> (+) failed to demonstrate that advice from an oral health educator improved caries (dmf intervention = 2.65 (SD 2.5), dmft control = 3.22 (SD 2.85)) or that it improved knowledge to a statistically significant extent (intervention score = 47, control = 39). One RCT<sup>14</sup> (+), in which fluoride toothpaste was also distributed, demonstrated a reduction in caries increments (DMFS increments in intervention 2.56 (confidence interval (2.07) – (3.05)), control 4.60 (confidence interval (3.99) – (5.21)). Size of effect for knowledge and behaviour changes cannot be quantified/compared across studies as there is no single accepted unit of measurement for dental health knowledge or behaviour. Three randomised trials in Scandinavia, reported in four papers<sup>12,14,15,19</sup> (2+, 1-), all showed that oral health promotion delivered by an oral health professional resulted in improved oral hygiene. A quasi-experimental study in the USA<sup>16</sup> (-), and another in Sweden<sup>4</sup> (-) showed improvements in plaque, gingivitis, and reported oral hygiene behaviour. However, the USA study showed no effect on dmft (unchanged in intervention and control groups) in the short term (2 months). One RCT reported in two papers<sup>17,18</sup> (-) showed an effect on caries incidence (New Caries: Test 0.71, Control 1.91; p<0.1). This intervention included fluoride varnish application along with motivational interviewing. One RCT in the USA<sup>20</sup> (+) showed that educating parents could positively influence children's behaviour in the dental surgery (intervention behaviour 3.62, control behaviour 3.35, p<0.05). Overall there is strong evidence suggesting that verbal oral health promotion by dental professionals has a positive effect on patient knowledge, behaviour and gingival health, but the effect is insufficient to impact on caries levels unless the use of fluoride is included.

The evidence reported is directly applicable to UK populations as disease levels, behaviour and expected behaviours in the countries where the studies took place are largely similar to the UK.

<sup>4</sup>Jonsson et al. 2009 (-)

<sup>12,15</sup>Hugoson et al. 2003, 2007 (+)

<sup>13</sup>Blinkhorn et al. 2003 (+)

<sup>14</sup>Hausen et al. 2007 (+)

<sup>16</sup>Lepore et al. 2011 (-)

<sup>17,18</sup>Weinstein et al. 2004, 2006 (-)

<sup>19</sup>Jonsson et al. 2006 (-)

<sup>20</sup>Wang et al. 2010 (+)

## Leaflets/written materials

### Evidence Statement 3

Strong evidence from four RCT UK studies, reported in six papers<sup>21-26</sup> (4+), suggests that leaflets are an effective way of enhancing patients' knowledge of oral cancer and reducing associated fear and distress. One of these studies, reported in two papers<sup>21-22</sup> (+) showed that knowledge in the leaflet group increased more (30.87 (95% confidence intervals (30.51) – (31.24)) than in the control group (26.11 (95% confidence intervals (25.7) – (26.48)) effect size 1.29). An additional RCT<sup>27</sup> (+) presented moderate evidence that written information had less effect than verbal delivery or video delivery when educating orthodontic patients to improve oral hygiene (PI % change, written = 1.48, video = 12.32, verbal = 18.7).

A UK audit study by Wanless<sup>28</sup> (-) described how the readability of written oral health promotion material might be improved and a qualitative study<sup>29</sup> (+) indicated that young males considered written information to be purely functional and impersonal.

There is therefore strong evidence that leaflets are effective for increasing patient knowledge, but some weak evidence that they are less effective than other modes of delivery. They are potentially less acceptable to patients than personal delivery of information. No evidence was identified suggesting that oral health promotion in leaflets affect health outcomes.

This evidence is applicable to patients attending dental practices in the UK as this setting was relevant to the majority of these studies.

<sup>21,22</sup>Humprhis et al. 2003, 2004 (+)

<sup>22</sup>Humpris et al 2004 (+)

<sup>23,24,25</sup>Humpris et al. 2004, 2001, 2001 (+)

<sup>26</sup>Boundouki et al. 2004 (+)

<sup>27</sup>Lees et al. 2000 (+)

<sup>28</sup>Wanless. 2001 (-)

<sup>29</sup>Ashford. 1998 (+)

## Other methods of delivery

### **Evidence Statement 4**

#### **4.1 Group discussions**

There is strong evidence of the effectiveness of group discussions compared to standard oral health promotion from a cluster RCT<sup>30</sup> (+) carried out in Thailand, which involved mothers of children aged 6-19 months. Both intervention and control groups received dental health education and toothbrushes. The intervention group also participated in group discussions conducted by trained moderators, which lasted about one hour. Group discussions may be an effective adjunct to traditional dental health education in altering behaviours, as 20% more mothers in the study reported that their child's teeth were brushed. The intervention did not have any effect on caries levels.

This evidence is probably not applicable to patients attending general dental practices in the UK as group discussions with mothers of young children do not fit with the current model of service delivery in the UK.

#### **4.2 Technology**

There is weak evidence concerning the use of technology for oral health promotion from a small pilot study by O'Hara<sup>31</sup> (-), in which 36 people with intellectual disabilities and poor oral and general health were taught to use personalised digital assistants (PDAs), which reminded and prompted them to undertake oral hygiene practices. The effectiveness of the intervention was assessed by gathering anecdotal evidence from support care staff and by the individuals by measuring oral health status using a 4 point scale. More than half of the participants had difficulty with the technology, and 11 of 36 participants dropped out of the study. Of the remaining 25, ten achieved improvement in oral health. There is therefore no evidence that technology can be used to promote oral health in general practice.

The findings from this small study may not be applicable to the majority of people attending general dental practices.

#### **4.3 Clinical intervention with advice**

There is weak evidence from a study in Australia<sup>32</sup> (-), in which high risk young adult patients (aged 18-35) underwent assessment of fortnightly coaching in oral hygiene and topical fluoride. 20 patients, who were examined after six months attained and maintained lower plaque levels, had decreased gingival inflammation, and had reduced rates of caries progression. This study offers weak evidence that intensive oral hygiene instruction and fluoride application can improve oral health.

However, the evidence is only partially applicable to the UK population attending general dental practices due to differences between the UK and Australian system for dental care.

<sup>30</sup>Vachiraropjisain et al. 2005 (+)

<sup>31</sup>O'Hara et al. 2008 (-)

<sup>32</sup>Sbaraini et al. 1994 (-)

## Message content and effectiveness

### Evidence statement 5

Strong evidence about the content of oral health promotion was derived from six studies, four of which were carried out in the UK (one study was reported in two papers)<sup>33-37</sup> (3+, 1-), one in Israel<sup>38</sup> (-), and one in Sweden<sup>39</sup> (++) . These studies explored the content of oral health promotion which is given in general practices. None of these studies examined the effectiveness of the oral health promotion. One study<sup>37</sup> (-) indicated that 28% of the advice given about fluoride did not comply with British Society of Paediatric Dentistry guidelines and another study<sup>36</sup> (+) showed that 32% of practitioners were likely to give advice which did not comply with official guidance. Two qualitative studies<sup>34,35,39</sup> (1+, 1++) showed that the content of the oral health promotion advice given, depended on the practitioner's view of what the receiver might be receptive to. Two studies<sup>33,38</sup> (1+, 1-) indicated that oral hygiene instruction was the preferred route for giving advice.

There is therefore moderate evidence that the content of oral health promotion messages given in practice does not always accord with guidelines and official advice. There is moderate evidence that content is tailored to the patients' needs, expectations and apparent motivations. There is no evidence as to how the content of oral health promotion impacts its effectiveness, as none of the studies exploring content assessed the impact of content on effectiveness.

This evidence is applicable to dental practice in the UK.

<sup>33</sup>Holloway et al. 1994 (+)

<sup>34,35</sup>Threlfall et al. 2007 (+)

<sup>36</sup>Witton et al. 2013 (+)

<sup>37</sup>Harris et al. 2002 (-)

<sup>38</sup>Ashkenazi et al. 2014 (-)

<sup>39</sup>Jensen et al. 2014 (+)

## Influence of receiver characteristics

### Evidence Statement 6

There is weak evidence from one controlled clinical trial<sup>40</sup> (-), a before and after study<sup>41</sup> (-) and four qualitative studies<sup>42-45</sup> (4+), suggesting that oral health promotion, especially designed for very specific receiver groups, is effective in improving knowledge and attitudes. Two Canadian studies<sup>43-44</sup> (2+) using qualitative methodology, and one in Finland<sup>40</sup> (-) using quantitative methods, explored oral health promotion with deprived individuals. These studies suggest that an understanding of the social context of oral health and the development of relationships/collaborations are a vital part of developing oral health

promotion interventions for the underprivileged. Three studies, one carried out in Australia, and two in America, examined oral health promotion for very specific special groups – intellectually disabled<sup>42</sup> (+), HIV positive individuals<sup>45</sup> (+), and scleroderma patients<sup>41</sup> (-). An emergent theme from these studies is the need for collaboration and understanding between professional and receiver groups. Thus, there is moderate evidence that the perceptions of the receiver regarding their relationship with the sender, and the senders' understanding of the context of the receivers' lives and behaviour, are relevant to their acceptance and likelihood of acting upon oral health promotion messages.

These studies were all conducted outside of the UK so the results may only be partially applicable to people attending dental practices in the UK, as the cultural and economic provision for dental care for groups with special needs differs in North America, Australia, and the UK.

<sup>40</sup>Meurman et al. 2009 (-)

<sup>41</sup>Poole et al. 2010 (-)

<sup>42</sup>Grant et al. 2004 (+)

<sup>43</sup>Levesque et al. 2009 (+)

<sup>44</sup>Loignon et al. 2010 (+)

<sup>45</sup>Rajabiun et al. 2012 (+)

## Influence of 'sender' characteristics

### Evidence Statement 7

Evidence regarding the affect of sender characteristics was identified in four papers including one quantitative<sup>46</sup> (-) and three qualitative<sup>39,47,48</sup> (2+, 1++) studies. These studies explored aspects of the 'sender's' influence on oral health promotion and how the sender affects its potential effectiveness. A quantitative questionnaire study by Schouten<sup>46</sup> (-), which measured satisfaction with communication, gave weak evidence that a receiver's responses were influenced by the dentist's ability to communicate. A qualitative study<sup>48</sup> (+) demonstrated that dentists who were networked to other oral health professionals, and committed to prevention were more positive about oral health promotion. Another qualitative study carried out in Sweden<sup>39</sup> (++) showed that oral health professionals often assume that patients have sufficient knowledge from other sources and do not need further advice. Two studies<sup>39,48</sup> (1++, 1+) suggested that holistically-thinking, health focussed (as opposed to curative disease focused) professionals were more positive about oral health promotion.

There is therefore moderate evidence from qualitative studies to suggest that the beliefs, attitudes and values of oral health professionals influence the likelihood of them participating in and being positive about oral health promotion. No studies directly compared the effectiveness of oral health promotion given by different members of the dental team, therefore there is no evidence concerning the comparative effectiveness of different oral health staff on the effectiveness of oral health promotion.

The evidence above is considered applicable to oral health promotion given in UK general dental practices.

<sup>39</sup>Jensen et al. 2014 (++)

<sup>46</sup>Schouten et al. 2003 (-)

<sup>47</sup>Brocklehurst et al. 2013 (+)

<sup>48</sup>Dyer et al. 2006 (+)

## Influence of framing

### Evidence Statement 8

There is weak evidence from one study<sup>49</sup> (-) to suggest that the framing of oral health promotion messages should be positive. This study examined the influence of message framing and credibility on the receiver's attitudes and intentions in the context of oral health. This paper applied theories and previous study results to the oral health context. The study suggested that the application of prospect theory (in which decision making is affected by the perceived value of outcomes in the future) would imply that in relation to oral health service usage, messages should be framed negatively (in terms of losses if the behaviour is NOT taken up), but that health promoting messages should be framed positively (in terms of benefit if the suggested behaviour IS taken up).

This study is probably only partially applicable to the UK as it was carried out in the US and focused on attending a dental practice for an examination. Dental attendance is perceived differently in the UK and USA and therefore the applicability may be limited.

<sup>49</sup>Arora. 2000 (-)

## Barriers and facilitators

### Evidence Statement 9

Strong evidence from 11 studies; seven qualitative, two surveys, and two mixed method studies (1++, 9+, 1-) define barriers and facilitators to oral health promotion. Three qualitative studies reported in four papers<sup>34,35,39,48</sup> (1++, 2+) showed that dentists gave messages which accorded with their own experiences and prejudices, and there was moderate evidence that the sender's belief in the credibility and effectiveness of oral health messages affected the likelihood of them conveying them to the patient. The oral health professional's level of understanding of the 'receiver' was shown in four studies<sup>29,39,47,48</sup> (1++, 3+) to act as a barrier or facilitator to effectiveness, and two studies<sup>39,48</sup> (1++, 1+) showed that if the sender felt commitment to, and enjoyment/satisfaction when promoting oral health, this would act as a facilitator. There was also moderate evidence from three qualitative studies<sup>42,44,45</sup> (3+), that any pejorative or judgemental views held by the sender, concerning the receiver of the message, would act as a barrier to oral health promotion. Three studies<sup>38,48,50</sup> (2+, 1-) indicated that lack of appropriate resources (knowledge, staff, time, space) act as barriers to the delivery of effective oral health promotion.

This evidence is likely to be directly applicable to the UK situation.

<sup>29</sup>Ashford. 1998 (+)

<sup>34,35</sup>Threlfall et al. 2007 (+)

<sup>36</sup>Witton et al. 2013 (+)

<sup>38</sup>Ashkenazi et al. 2014 (-)

<sup>39</sup>Jensen et al. 2014 (++)

<sup>42</sup>Grant et al. 2004 (+)

<sup>44</sup>Loignon et al. 2010 (+)

<sup>45</sup>Rajabiun et al. 2012 (+)

<sup>47</sup>Brocklehurst et al. 2013 (+)

<sup>48</sup>Dyer et al. 2006 (+)

<sup>50</sup>Williams et al. 2011 (+)

## Factors affecting satisfaction and motivation

### Evidence statement 10

Three papers (one quantitative<sup>46</sup> and two qualitative<sup>51,52</sup>) offered evidence regarding the factors affecting patient satisfaction and motivation relating to a dental consultation. One of these was carried out in Holland<sup>46</sup> (-) and showed that patients who make decisions about what is to happen to them are the most satisfied. The study also showed that patient satisfaction was correlated to the way in which the dental professional communicated ( $r = 0.34$   $p < 0.001$ ). In another qualitative study<sup>51</sup> (++) it was shown that while the healthcare system and the physical environment influenced patient satisfaction, relational aspects of care, such as sense of connection, the dentist's attitude, communication, and the patient's sense of feeling valued and empowered, were important factors in the patient's satisfaction with the care they receive and their relationship with the oral health promoter. In addition a study in Sweden<sup>52</sup> (++) showed that the credibility of the people in the dental surgery was essential in oral health promotion, as was their ability to create confidence during a visit.

There is therefore strong evidence that positivity and communication affect patient satisfaction and motivation.

It is likely that this evidence is applicable to UK populations as one of the studies took place in the UK and the others in Holland and Sweden, which are culturally similar in terms of relationships between professional and patients.

<sup>46</sup>Schouten et al. 2003 (-)

<sup>51</sup>Mills et al 2014 (++)

<sup>52</sup>Ostberg 2005 (++)

## Combining oral health promotion with broader health messages

### Evidence Statement 11

No studies published in English since 1994 were identified which specifically examined the effectiveness of combining oral health messages with general health promotion. One study<sup>48</sup> (+) investigated whether dental teams would be prepared to give patients general health advice, but no studies were identified which tested the effectiveness of combining such

messages with oral health promotion. There is therefore no evidence on which to base conclusions or recommendations about doing so.

<sup>48</sup>Dyer et al. 2006 (+)

## List of abbreviations and Glossary

Caries	tooth decay (largely a disease of childhood, caries studies are invariably carried out in children)
Caries increment	amount of new decay occurring within a given time period
CDSS	Communication in Dental Setting Scale
DHE	dental health education
DMFT(s)	decayed, missing and filled secondary teeth (surfaces)
Dmft(s)	decayed, missing and filled primary teeth (surfaces)
ECC	early childhood caries
F	fluoride
Frankl Score	a method of scoring behaviour in the dental surgery
GBI	Gingival Bleeding Index
GDPs	General Dental Practitioners
GI	gingival index
Gingival disease/gingivitis	inflammation of the gums
Interproximal/Approximal cleaning	cleaning the surfaces of the teeth which are in contact with each other
Interproximal/Approximal surfaces	the surfaces of the teeth which are in contact with each other
NNT	numbers needed to treat
NSPT	non-surgical periodontal treatment
OHP	oral health promotion
PCC	person-centred care
PCDs	professionals complementary to dentistry
PDA	personal digital assistant
Periodontal disease	loss of attachment of the tooth to the gum (studies are almost ubiquitously carried out in adults)
PHP	patient hygiene performance index (method of measuring how clean the teeth are)
PI	periodontal index
PIL	patient information leaflet
PLI	plaque index
S. mutans	Streptococcus mutans (bacteria mostly associated with caries)

## 1. Introduction

### 1.1 The Need for Guidance

Although people's oral health in England has improved significantly over recent decades there is considerable room for improvement. The Adult dental health survey 2009 (Health and Social Care Information Centre 2011) reports that the proportion of adults in England without natural teeth has dropped from 28% to 6% in the past 30 years. In 2003, 47% of children aged 12 and 49% of young people aged 15 had fillings. This compares with 60% and 63% respectively in 1993 (Child dental health survey 2003 Health and Social Care Information Centre 2005). However, tooth decay (dental caries) and gum (periodontal) disease remain widespread, despite being largely preventable (Levine and Stillman-Lowe 2009). The Adult dental health survey 2009 found that just under 31% of adults had obvious tooth decay. In 2012, 27.9% of children aged 5 had tooth decay (National Dental Epidemiology Programme for England, 2012). In addition, oral cancer is one of the UK's fastest growing cancers (Cancer incidence in the UK in 2011, Cancer Research UK 2014).

Oral health is important to general health and wellbeing. Poor oral health can be painful and can affect people's ability to eat, speak and socialise normally (Dental quality and outcomes framework DH 2011). It can lead to absences from school and workplaces. It can also affect the ability of children to learn, thrive and develop (Local authorities improving oral health: commissioning better oral health for children and young people – an evidence informed toolkit for local authorities Public Health England 2014). Left unchecked, gum disease may increase people's risk of heart disease and heart attacks, stroke, diabetes (and its management), as well as rheumatoid arthritis. In addition, it can be expensive to treat. Each year the NHS in England spends around £3.4 billion on primary and secondary dental services (Improving dental care and oral health – call to action NHS England 2014).

Wide variations in oral health exist across England. For example, the prevalence of tooth decay among children aged five ranges from 12.5% in Brighton and Hove to 53.2% in Leicester (National Dental Epidemiology Programme for England, 2012). Factors associated with severe tooth decay include:

- living in a deprived area
- being from a lower socioeconomic group or living with a family in receipt of income support
- belonging to a family of Asian origin
- living with a Muslim family in which the mother speaks little English (Rayner et al. 2003), or
- having a chronic medical condition (Department of Health, 2007).

The prevalence of certain types of oral disease is also known to be higher among some black and minority ethnic groups (Oral health and access to dental services for people from black and minority ethnic groups Race Equality Foundation 2013). However the relationship between ethnicity and oral health is complex.

NHS dental services have over a million contacts with patients each week (Improving dental care and oral health – call to action NHS England 2014). In 2009, 76% of

adults reported attending the dentist in the past 2 years (Adult dental health survey 2009). In 2013, 69.1% of children in England (aged under 18 years) had seen an NHS dentist in the past 2 years (NHS dental statistics for England 2012–13 Health and Social Care Information Centre 2013). So dental teams are ideally placed to advise on modifiable risk factors and self-care approaches that can help prevent many chronic non-communicable diseases – including oral health disease. (Risk factors include tobacco use, alcohol consumption and a poor diet.) However, in the Adult dental health survey 2009 only 9% of adults with teeth and 7% of adults without teeth recalled being asked about smoking (Health and Social Care Information Centre 2011). Similarly, 64% of adults in the survey did not recall being asked about their diet by the dental team.

Reforms to the NHS dental contract look set to focus more on preventing poor oral health, as dental teams become responsible for improving the general health of their patients (Public Health England 2014). The Adult dental health survey 2009 found that 78% of adults recalled being given advice at the dentist on cleaning their teeth or gums. And 75% of adults with natural teeth in England reported that they brush their teeth at least twice a day (76% using high or medium strength fluoride toothpaste). However, 66% of adults surveyed had plaque on at least 1 tooth and 68% had tartar (hardened dental plaque) in at least 1 sextant of the dental arch (Adult dental health survey 2009). In addition, 37% of people who regularly go to the dentist said they do not use oral hygiene products such as dental floss and interspace brushes.

According to the Adult dental health survey 2009 91% of those surveyed felt that the dentist they saw most recently listened carefully to them. Most (89%) felt they were given enough time to discuss their oral health and were involved in decisions about their care or treatment. And most (94%) understood the answers they received. However, 20% were not satisfied with the dentist. Those with a poor relationship with the dentist tend to rate their own oral health lower, leave longer intervals between visits to the dentist and are more likely to be extremely anxious about visiting a dentist

## **1.2 The Scope of the Review**

The scope of the review is defined below:

### **1.2.1 Areas covered by the Review**

The review considered any oral health promotion message that fits the description given in 'delivering better oral health: an evidence-based toolkit for prevention' (DoH, 2009). In particular it focusses any research which might inform practices how dental teams can most effectively convey the "advice for patients" messages recommended in that publication, regardless of the study design. This includes how to deliver these messages in a way that ensures that when people leave the dentist, they are satisfied about their visit and motivated to follow the advice. It also includes the following approaches and activities:

- verbal information (planned or as the opportunity arises), for example brief or very brief advice, giving information on useful resources, and motivational interviewing (helping motivate people to change their behaviour)
- practical demonstrations, for example, showing how to remove dental plaque and how to brush teeth properly
- leaflets, posters, and other printed information. This includes different presentations (for example, visual and numeric formats) and different writing styles (for example, personal accounts and scientific facts)
- new media, including websites and social media, email and text messaging

### **1.2.2 Population Groups Covered**

The populations covered in this review are all adult and child patients who visit, or will potentially visit a general dental practice.

### **1.2.3 Outcomes**

We constructed a logic model (Figure 1) in order to help refine the questions. This model is our representation of our theory of the changes we are interested in, not necessarily what is really happening. It includes process indicators (shown in white) and expected outcomes (shown in pink).

*Health-related outcomes:*

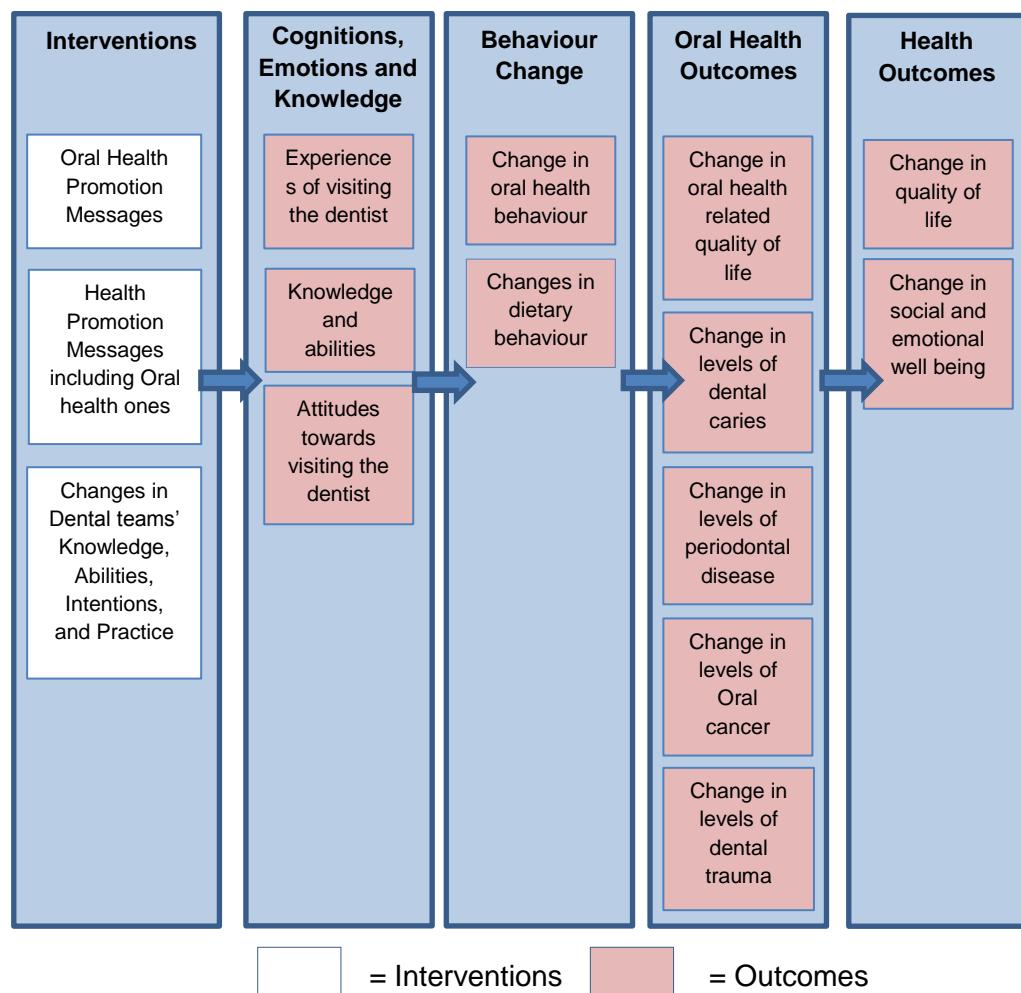
- Changes in dental patients' quality of life, including their social and emotional wellbeing.

*Oral Health –related outcomes:*

- Changes in the oral health of people attending dentists. E.g. levels of tooth decay, gingivitis and periodontitis (gum disease), oral cancer, and dental trauma.

*Knowledge, attitudes and behaviours:*

- Changes in dental health teams' knowledge, ability, intentions and practice in relation to promoting their patients' oral health.
- Changes in people's experience of visiting the dentist.
- Changes in people's knowledge and ability to improve and protect their oral health.
- Changes in people's oral health related behaviours (oral hygiene, diet, etc.)
- Changes in people's attitudes to oral health and related behaviour



**Figure 1. Logic model: Interventions with process indicators and expected outcomes**

#### 1.2.4 Research Questions

We considered the following specific questions in order to understand the factors affecting the effectiveness of oral health promotion interventions (Table 1 outlines the PICO structure for this set of questions):

- Does the application of behavioural and psychological theory to oral health behaviour lead to effective oral health promotion interventions?
- What is the most effective mode of delivery (channel) of oral health promotion?
  - Is verbal delivery of oral health promotion effective?
  - Is delivery of oral health promotion by leaflet/written material effective?
  - Is delivery of oral health messages by means other than verbally / in writing effective?
- What is the content of oral health messages and how does content influence effectiveness?

- What is the influence of 'receiver' characteristics on the effectiveness of oral health promotion?
- What influence do 'sender' characteristics have on the effectiveness of oral health promotion?
- What influence does framing have on the effectiveness of oral health promotion messages?
- What are the barriers and facilitators to effective oral health promotion?
- What factors affect patient satisfaction and motivation after a dental visit?
- Are oral health promotion messages more likely to have an effect on patients if they are linked to wider health outcomes?

**Table 1. PICO structure for the review**

P (Population)	Receiver of the message: Adult and children attending the dentist Delivery of the message: Dental Staff
I (Intervention) and C (Comparison)	Oral Health Promotion Messages. Based on the sub-question, they will be categorised in the following groups: a) Models of behavioural change(different approaches against each other or against standard practice) b) Presentation of the health messages (different messages against each other) c) The personnel involved in delivery and receipt of messages (different types of people/team members) d) Framing of the health messages (different approaches against each other) e) Oral Health specific messages versus Oral Health Messages along with wider health messages
O (Outcomes)	Outlined in section 4.3

In addition to this, we considered the following questions to understand the underlying mechanisms that result in some interventions working for certain groups in certain conditions (Table 2 outlines the SPICE structure for these questions):

- What are the barriers and facilitators to effective oral health promotion?
- What factors affect patients' satisfaction and motivation after a dental visit?

**Table 2. SPICE structure for exploratory questions**

S Setting	Any setting in which the oral health promotion message is conveyed to potential dental patients
P Perspective	Patients or Members of Public and/or Dental Staff or staff who are not dentally trained e.g. receptionists, practice managers etc.
I Intervention/Interest and C Comparison	Oral Health Promotion Messages. Based on the sub-question, they will be categorized in the following groups: <ul style="list-style-type: none"> <li>a) Mode of delivery (different behavioural models against each other)</li> <li>b) Presentation of the health messages (different messages against each other)</li> <li>c) The people involved in delivery and receipt</li> <li>d) Framing of the health messages (different approaches against each other)</li> <li>e) Combining oral health with wider health issues</li> </ul>
E Evaluation	Barriers and Facilitators in designing the messages Barriers and Facilitators in delivering the messages Acceptability of the Messages Patient Experience

## 2. Methodology

### 2.1 Literature Search

This review considered studies in general dental practice that looked at different ways of promoting good oral health in adult and child patients, both in terms of awareness and in terms of health related behaviours, and health outcomes. Oral health awareness encompasses knowledge of lifestyle impact and diet as well as oral hygiene practices. An approach was therefore used that included all of these aspects of oral health.

It was important that the studies were restricted to messages which could potentially be conveyed in the context of general dental practice. The strategy was used to narrow results as far as possible without missing potentially relevant studies. Also, in order to ensure studies retrieved from the searches fulfilled the inclusion criteria, the search specified study designs, using a mixture of MeSh terms and textwords. Appendix A provides the full search strategy developed for OVID Medline.

The cut-off date for publication of evidence was 1994. This date was chosen as the last landmark review in this area was conducted by Kay and Locker (1998), which included papers published up until 1994. It was felt that the search should not be limited by country because oral health promotion is universal.

Oral health studies are published in all types of medical, psychological and sociological journals. Therefore, it was felt that a large number of databases covering all of those areas should be searched in order to gather the broadest range of evidence possible. Search strategies were devised to search the following database catalogues of literature:

- AMED (EBSCO)
- CINAHL (EBSCO)
- Cochrane Library (which includes the Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effect (DARE), Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Methodology Register (CMR), Health Technology Assessment Database (HTAD) and NHS Economic Evaluation Database (NHSEED) – we used the Wiley Online Library platform to conduct the Cochrane Library search)
- EMBASE (Elsevier)
- Medline (EBSCO)
- Medline (OVID)
- Medline (PubMed)
- Medline in Process (OVID)
- PsycINFO
- PsycARTICLES
- ScienceDirect (Elsevier)
- SocINDEX (EBSCO)

- ASSIA
- Social Policy and Practice
- HMIC (Health Management Information Consortium)
- Cochrane Oral Health Group

In addition, the following grey literature databases were also searched:

- The Knowledge Network
- Intute
- MedNar
- Copac
- EPPI-Centre
- EThOS
- OpenGrey
- TRIP

If sufficient results had not been retrieved from these searches, further websites (as detailed in the protocol) would have been searched. However, as the primary searches resulted in a large number of articles, a further search was not carried out.

## **2.2 Call for Evidence**

We also used our professional networks and contacts, including the British Dental Association, to issue a 'Call for Evidence' in order to ensure that any current or recently completed relevant research would be included in the review. Four potentially relevant pieces were sent to us, of which one article was included in the final review.

## **2.3 Citation checking**

In order that no studies were overlooked, we checked the citations of three systematic reviews. The Cochrane Library was searched for relevant reviews pertaining to oral health promotion. Only two Cochrane reviews were identified as being relevant (Khokhar, 2001; and Harris 2012). In addition, after consultation with the CPH team, a non-Cochrane systematic review was also identified (Yevlahova and Satur, 2009). The reference lists for all three reviews were cross-checked with the results from our original search. Only one study was found which was in scope, but had not been detected by our search. This study was then subjected to the procedure outlined below and included in the review.

## 2.4 Selection of Studies for Inclusion

### **Inclusion criteria for the effectiveness questions:**

- Any paper incorporating the PICO structure as outlined in Table 1.
- Any intervention or observational study

### **Inclusion criteria for the exploratory questions:**

- Any paper incorporating the SPICE structure as outlined in Table 2.
- Any study that used qualitative study designs such as ethnographic research, case studies, process evaluations and mixed methods designs.

### **Exclusion criteria:**

- The evidence base underpinning oral health advice for patients
- Clinical dental treatment
- Approaches to tackling clinical diagnoses of dental anxiety and phobia (as listed as one of the specific phobias in the Diagnostic and Statistical Manual of Mental Disorders [DSM-V]).
- Oral health needs assessments
- Community-based oral health promotion programmes and interventions
- Oral health promotion and dental treatment in residential or care settings (including hospitals and nursing and residential care homes for children, young people and adults).
- Any article other than primary research
- Articles outlining expert opinions
- Any paper published before 1994

## 2.5 Selection Process

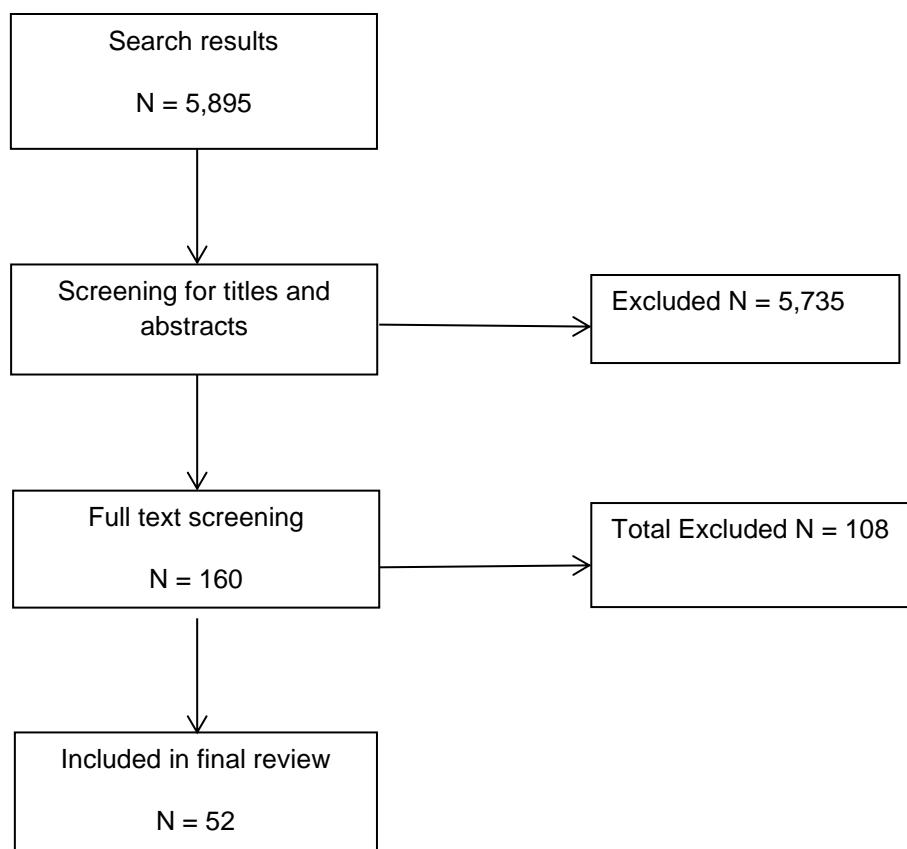
Duplicates were removed from the retrieved search results. After training and calibration, three reviewers screened the titles and abstracts for obviously irrelevant studies and these were excluded. Studies were then reviewed by the team's content experts who removed studies which did not specifically fit the inclusion and exclusion criteria. Where there was insufficient data in the title or abstract, or both, to make a clear decision regarding eligibility of studies, the full text of the paper was obtained. Details of excluded studies at both stages have been documented.

Once the titles and abstracts had been screened, the full texts were obtained for remaining articles. All papers were then independently assessed for appropriateness to the review's aims by two reviewers. Where there were discrepancies in the final decision of whether the article was to be included or excluded, a third reviewer was consulted in order to reach a consensus. All details of inclusion and exclusion at this stage have been documented in an audit trail.

## 2.6 Search Results

Figure 2 illustrates the flow of studies through the sifting process. References were managed using EndNote; where databases were not compatible with Endnote, search results were recorded in Microsoft Excel. Appendix C summarises all of the full papers which were excluded from the review, with corresponding reasons for exclusion.

**Figure 2. Flow of studies**



## 2.7 Quality Appraisal

The internal and external validity of all the included studies (both quantitative and qualitative) were assessed by the quality appraisal checklists provided in Methods for the development of NICE public health guidance (third edition). Examples of the

quality assessment checklists used for different study designs can be found in Appendix B. Each study was rated (++, + or -) to denote its quality. Efficiency and effectiveness were considered key to the quality assessments. Our methodology expert (MN) provided an in-depth training session where the four researchers worked through examples of the quality assessments to ensure consensus on what was required. The quality assessments for each of the included papers were then conducted individually by the researchers, but in the same room to allow for discussion about any difficult or contentious judgements, in order that a consensus was reached. An additional reviewer independently assessed 10% of the quality assessments for the second time to ensure consistency. Following this, where there were reporting issues, where articles did not provide sufficient information to make judgments, the quality assessments were checked again by two reviewers until agreement was reached.

## **2.8 Study categorisation**

Studies were categorised by design as well as the research question that they related to.

## **2.9 Assessing applicability**

The evidence tables were each assessed at the synthesis stage, for their applicability to providing guidance on oral health promotion approaches for dental health teams. The underpinning studies for each statement were assessed as a collective with regards to their population(s), setting(s), intervention(s), and outcome(s), and the overall similarity they have to the original research questions outlined. Once conclusions had been drawn from the collective evidence, the resultant evidence statement was categorised as:

- Directly applicable
- Partially applicable
- Not applicable

An additional statement accompanied each evidence statement detailing the applicability category to which it was assigned, as well as the reasons why this category was allocated.

## **2.10 Synthesis**

The studies were grouped using the following methodology. Members of the research team discussed and decided for each study which of the research questions was the research's primary and secondary focus. A content expert then read and considered the key findings of each paper. The key findings were compared and contrasted and key themes identified. No meta-analysis was carried out due to the heterogeneity of both interventions and outcome measures. For the qualitative papers, thematic analysis of content was undertaken by two content experts, revealing emergent themes within and across groups of papers.

## **2.11 Strength of the evidence**

Evidence supporting the findings was considered to be strong if it was supported by data from one or more studies rated (++) OR more than one RCT rated (+) or better. Evidence was considered moderate if there was supportive information from more than one study of any design which was rated (+) or better. Evidence was considered weak if the finding was supported by the results of studies rated (-).

### 3. Summary of Findings

#### 3.1 Overall summary of studies identified

In the main review, 44 studies reported in 52 papers were included. Fifteen of the studies were RCTs, two were cluster RCTs, and one was a controlled trial. Also included were five quasi-experimental studies, two before-and-after studies without control groups, three surveys, eleven qualitative studies, three mixed methods studies, one audit and one pilot study.

Two of the RCTs were high quality (++) , ten were rated as moderate quality (+) and three were rated (-). Both cluster RCTs were of moderate quality (+) and the controlled trial was rated (-). Of the qualitative studies, three were appraised as high quality (++) and the remaining eleven (which includes the qualitative parts of the three mixed methods studies) were appraised as moderate quality (+). The before and after studies, quasi-experimental, audit, pilot and survey studies were all rated (-) apart from one quasi-experimental study which was high quality (++) , and one survey which was methodologically sound (+).

The evidence was very disparate and the quality of reporting highly variable. Many studies relied on patient reported behaviour rather than objective clinical measures or observed behaviours. Many had short follow up periods. Similarly, it was not possible to undertake any meta-analyses, as the homogeneity of neither the interventions or outcomes were insufficient, or the outcomes were measured in units that could not be translated into behavioural or health outcomes. Graphical representation of the findings was therefore considered inappropriate.

The heterogeneity of the populations studied, the settings, and the outcomes measured in the reviewed studies did not allow overall definitive conclusions to be drawn regarding the “best” way to deliver oral health promotion. Therefore careful consideration was given to determining how best to group the studies in order to provide meaningful evidence statements that would guide the development of recommendations.

Our search strategy revealed a considerable number of studies focusing on the delivery of smoking cessation advice. The majority of the smoking cessation studies identified were not specifically about promoting oral health per se. It was therefore decided, in consultation with the CPH team, that while we would endeavour to undertake a brief narrative synthesis in order to be able to make a ‘state-of-the-art’ statement about smoking cessation advice via dental surgeries, this would not be part of the main review. Appendix D provides an overview of the smoking cessation studies.

**Table 1. Summary of included studies**

Research Question	No of studies	Quality of studies
3.2 Does the application of behavioural and psychological theory to oral health behaviour lead to effective oral health promotion interventions	8	3++ 3+ 2-
3.3.1 Is verbal delivery of oral health promotion an effective mode of delivery?	8	4+ 4-
3.3.2 Is delivery of oral health promotion by leaflet / written material effective?	7	6+ 1-
3.3.3 Is delivery of oral health promotion by means other than verbal / leaflet effective?	3	1+ 2-
3.4 What is the general content of oral health messages and how does the content affect effectiveness?	6	1++ 3+ 2-
3.5 How do 'receiver' characteristics affect the effectiveness of oral health promotion?	6	4+ 2-
3.6 How do 'sender' characteristics affect the effectiveness of oral health promotion?	4	1++ 2+ 1-
3.7 What is the affect of 'framing' on the effectiveness of oral health promotion messages?	1	1-
3.8 What are the barriers and facilitators to effective oral health promotion?	11	1++ 9+ 1-
3.9 What factors affect patient satisfaction and motivation after a dental visit?	3	2++ 1-
3.10 Are oral health promotion messages more likely to have an effect on patients if they are linked to wider health outcomes?	0	N/A <sup>1</sup>

<sup>1</sup> N/A = Not applicable

### 3.2 Does the application of behavioural and psychological theory to oral health behaviour lead to effective oral health promotion interventions?

Studies	Design	Quality	External Validity	Population	Intervention	Comparison	Outcome	Positive finding
Jonsson et al. (2009, 2010, 2012) (3 papers) Sweden	RCT	++	++	Patients with periodontal disease	Individually tailored oral health programme	Standard care	Pocketing Plaque Gingival health	No Yes
Jonsson et al. (2009) Sweden	Quasi-experimental (2 cases)	-	-	Periodontal patients	Motivational interviewing at treatment	Unclear	Plaque Gingivitis Pocketing Reported behaviour	Yes Yes Yes Yes
Munster Halvari et al. (2012)	RCT	++	+	University students	Autonomy – supportive interview	Standard care	Plaque levels Behaviour	Yes Yes
Kakudate et al. (2009)	RCT	+	+	Patients with mild / moderate periodontal disease	Counselling with six-step method	Twenty minutes oral hygiene instruction	Plaque Index Behaviour	Yes Yes
Clarkson et al. (2009) UK	RCT (individual and cluster analysis)	+	+	Adults attending dentist	Oral hygiene education based on social cognitive aid implementation theory	Routine care and oral hygiene advice	Plaque score Bleeding score Reported behaviour	Yes (only in cluster) Yes (only in cluster) Yes
Little et al. (1997)	RCT	-	++	Patients with periodontal disease	OH in group or individual	Usual dental treatment	Plaque scores Pocket depth Behaviour	Yes Yes Yes

Fjellstrom et al. (2010)	Quasi-experimental	++	-	Healthy students	Cognitive Behaviour and Oral Health promotion	Traditional education and pictures of periodontal disease	Gingival health Plaque index Knowledge Behaviour	NR <sup>2</sup>
Kasila et al. (2006, 2008) (2 papers)	Qualitative	+	+	School children	Transtheoretical behaviour change counselling	Not applicable	Readiness for change Reported behaviour	N/A

<sup>2</sup> NR = Not reported

This section examines the evidence concerning oral health promotion interventions which include an active component that is based on behaviour change theory or the psychology of individual choice. The studies in this section were generally of higher quality than in other sections. The evidence for this section included eight studies reported in eleven papers.

A randomised controlled trial, published in two papers<sup>1,2</sup> (++) of an individually tailored oral health educational programme, based on a cognitive behavioural approach, involved 113 adult patients (60 females and 53 males) with chronic periodontitis, who were randomly allocated to an experimental or a control group. The intervention group received an individually tailored oral health educational programme based on cognitive behavioural principles. The individual tailoring for each participant was based on participants' thoughts, intermediate, and long-term goals, and oral health status. The control group (n=56) received standard periodontal care with demonstrations of oral hygiene and structured information. The effect of the programme on gingivitis [gingival index (GI)], oral hygiene [plaque indices (PLI) and self-report], and participants' global rating of treatment was evaluated three and 12 months after oral health education and non-surgical treatment. Between baseline and the 12-month follow-up, both GI and PLI improved more in the experimental group than in the control group. The mean gain-score difference was 0.27 for global GI [99.2% confidence interval (CI): 0.16–0.39,  $p<0.001$ ] and 0.40 for proximal GI (99.2% CI: 0.27–0.53,  $p<0.001$ ). The mean gain-score difference was 0.16 for global PLI (99.2% CI: 0.03–0.30,  $p=0.001$ ), and 0.26 for proximal PLI (99.2% CI: 0.10–0.43,  $p<0.001$ ). The participants in the intervention group reported a higher frequency of daily inter-dental cleaning and were more certain that they could maintain the attained level of behaviour change. The individually tailored oral health educational programme was efficacious in improving adherence to oral hygiene for a year. The largest difference was for interproximal surfaces. A further paper based on the same study was published<sup>3</sup> which included the effect on treatment as an outcome measure. This paper indicated that patients in the theory based intervention were regarded as achieving treatment success, or had higher odds of treatment success.

Jonsson also published results of a quasi-experimental study<sup>4</sup> (-) which assessed the effect of an individually tailored treatment programme for improved oral hygiene. Two experimental single-case studies with a multiple-baseline design were carried out in Sweden in a periodontal referral clinic. Different self-administered oral hygiene behaviours (toothbrushing and interdental cleaning) were examined. Cognitive Behavioural techniques were used to organise the strategies for the intervention. The central features in the programme were the individual analysis of knowledge and oral hygiene habits, with the patients setting goals for oral hygiene behaviour. Plaque, bleeding on probing, and periodontal pocket depth were all reduced and the positive results remained stable throughout the two year study period. The authors concluded that the successful application of this educational model suggests that it could be used as a method for tailoring interventions targeted at oral hygiene for patients with periodontal conditions.

A randomised controlled trial<sup>5</sup> (++) tested the hypotheses that a dental intervention designed to promote dental care competence in an autonomy-supportive way, relative to standard care, would positively predict patient motivation increases in dental home care, perceived dental competence, and dental behaviours. It was also hypothesised that the

intervention would decrease both dental plaque and gingivitis over 5.5 months. The study tested the hypothesis that the self-determination model within the intervention would increase motivation and perceived dental competence, both of which would be associated with improvements in dental behaviour, which would, in turn, lead to decreased plaque and gingivitis. A randomised two-group experiment was conducted at a dental clinic with 141 patients ( $M_{age} = 23.31$  years,  $SD = 3.5$ ), with pre- and post-measures (after 5.5 months) of motivation variables, dental behaviours, dental plaque, and gingivitis. The intervention made a moderate difference to dental behaviour, but autonomous motivation for the project and perceived competence, perceived autonomy support, dental plaque, and gingivitis all improved considerably. A structural equation model supported the hypothesised process model. Considering the very large effects on reductions in dental plaque and gingivitis, promoting dental care competence in an autonomy-supportive way, relative to standard care, has important practical implications for dental treatment, home care, and oral health.

A study by Kakudate et al.<sup>6</sup> (+) sought to determine whether a six-step behavioural cognitive method is more effective than traditional oral hygiene instruction. Thirty-eight adult patients with chronic periodontitis were randomly assigned to two groups. The intervention group received counselling by Farquhar's six-step method for ten minutes after traditional oral hygiene instruction. In both groups, oral hygiene instruction was given once a week, and performed three times in total for three weeks. The control group was given traditional oral hygiene instruction for 20 minutes. Clinical characteristics, deposition of dental plaque, frequency and duration of brushing, frequency of interdental cleaning and scores based on a scale of "self-efficacy for brushing of the teeth" were compared in both groups. There were no differences between the two groups in clinical, demographic, behavioural and self-efficacy characteristics at the baseline examination. However after the third visit, the intervention group had significantly higher self-efficacy, lower plaque index scores, longer brushing duration and higher frequency of inter-dental cleaning than those of the control group. Multiple regression analysis showed significant association of tooth brushing duration with self-efficacy for brushing of the teeth ( $p < 0.001$ ). There is therefore evidence that the six-step method is more effective for enhancing self-efficacy and behavioural change in oral hygiene than traditional oral hygiene instruction alone.

A cluster randomised controlled trial<sup>7</sup> (+) tested the hypothesis that an evidence-based intervention, framed within psychological theory, would improve patients' oral hygiene behaviour. The impact of the trial methodology on trial outcomes was also explored by conducting two independent trials, one randomised by patient and one by dentist. The study included 87 dental practices and 778 patients (Patient RCT = 37 dentists/300 patients; Cluster RCT = 50 dentists/478 patients). Controlling for baseline differences, pooled results showed that patients who experienced the intervention had better behavioural (timing, duration, method), cognitive (confidence, planning), and clinical (plaque, gingival bleeding) outcomes. However, clinical outcomes were significantly better only in the Cluster RCT, suggesting that the impact of trial design on results needs to be explored further.

A randomised clinical trial<sup>8</sup> (-) assessed the effect of a behaviour modification intervention on oral hygiene skills, adherence and clinical outcomes for older periodontal patients. Participants (n= 107) were aged 50-70 with moderate periodontal disease. They

were randomly assigned to usual care or intervention. The intervention consisted of five weekly, 90-mm sessions that included skill training, self-monitoring, weekly feedback about bleeding points and group support focused on long-term habit change. For the control group, usual care was given which consisted of standard periodontal maintenance and recall. Four-month follow-ups indicated significant improvements in the intervention versus the control group for oral hygiene skills and self-reported flossing ( $p < 0.001$ ), plaque, gingival bleeding, bleeding upon probing throughout the mouth, and pocket depth that measured between 3mm and 6mm at baseline ( $p < 0.009$ ). Applying the principles of behavioural self-management (similar to autonomy support) offers an effective and relatively inexpensive means of helping patients improve their self-care skills and achieve high levels of adherence to an effective self-care regimen.

A study<sup>9</sup> (++) compared a modified Cognitive Behavioural Therapy (CBT) model to traditional oral hygiene instruction in order to determine the impact on increased adherence to oral hygiene. Tools developed and tested in this pilot study were a self-reporting questionnaire, visual information consisting of pictures, and a diary to document their thoughts and feelings prior to and during tooth cleaning, according to the modified CBT method. Four participants were divided into two groups; CBT and control group. At the first visit, all participants answered a self-reporting questionnaire. The clinical examination consisted of measuring the PI, GI and GBI. The same information and instructions were given. All received toothbrushes, dental floss and professional tooth cleaning. The CBT group was instructed to document their feelings and thoughts in a diary. After three weeks, the participants answered the same questionnaire, and the same clinical measurements were conducted at the re-examination. The CBT group brought their diaries for evaluation. At the end of the study, there was a difference in PI, GI and GBI between the groups. The levels of PI, GI and GBI had decreased more in the CBT group than in the control group but no  $p$ -values or statistics were given. The questionnaire also showed that the CBT group had increased their knowledge and awareness about oral health. This pilot study shows that using a modified model of CBT, by keeping a diary, resulted in increased adherence to oral hygiene and knowledge about gingivitis, compared with traditional instructions

The effectiveness of oral health counselling concerning changes of oral hygiene habits in 11- to 13-year-old schoolchildren within a theoretical framework of the transtheoretical model and the motivational interview was tested in one study, published in two papers<sup>10,11</sup> (+). Thirty-one (n=31) schoolchildren were included in the counselling sessions that were conducted by four dental hygienists. The audiotaped and transcribed data were analysed qualitatively by using content analysis. In 2002, nearly every schoolchild needed to establish changes in oral hygiene habits but the assessment of schoolchildren's readiness for change often remained unclear. In 2002, giving normative advice was the most commonly used counselling strategy when addressing the need for change, but dental hygienist-centred change discussion and goal setting were also apparent and were related to the schoolchildren's rarely manifested changes of oral hygiene habits after the period of a year. The results suggested that the transtheoretical framework might be useful in constructing oral hygiene counselling for schoolchildren which focuses on the personal dynamics of change.

## Summary and Evidence Statement

A number of high quality RCTs of interventions based on theoretical behavioural or psychological models have shown the interventions to be successful at changing individuals' behaviour in a way that positively benefits their oral health, in terms of oral hygiene and gingival health. However none of the studies showed an effect on caries levels, unless fluoride application was involved.

### Evidence Statement 1

There is strong evidence from five RCTs reported in seven papers (2++, 2 +, 1-) <sup>1,2,3,5,6,7,8</sup>, two quasi experimental studies <sup>4,9</sup> (1++, 1-), and one qualitative study published in two papers <sup>10,11</sup> (+) to suggest that the use of behavioural and psychological theoretical models in the development of oral health promotion interventions, results in improved oral hygiene and gingival/periodontal health. One randomised controlled trial <sup>1-3</sup> (++) testing an oral health promotion programme based on a cognitive behavioural approach, showed a mean gain score difference of 0.27 for the Gingival Index in the intervention group (99.2% confidence interval (0.16) – (0.39),  $p<0.001$ ). Another RCT <sup>5</sup> (++) which tested an intervention based on an autonomy-supportive approach also showed significant effects on plaque reduction (effect size -0.86, 95% confidence interval (0.81) – (0.91)) and gingivitis (effect size -1.21, 95% confidence interval (-1.18) – (1.24)). Changes in positive behaviour were also reported in a quasi-experimental study investigating the role of cognitive behavioural therapy <sup>9</sup> (++) and a qualitative study applying the transtheoretical model of behaviour change <sup>10-11</sup> (+). These studies did not show changes in objectively measured dental health.

This evidence is applicable to people in the UK because all of the studies were conducted in circumstances which prevail in the UK and the models used to develop the interventions are apposite to UK populations.

<sup>1,2,3</sup>Jonsson et al. 2009, 2012, 2010 (++)

<sup>4</sup>Jonsson et al. 2009 (-)

<sup>5</sup>Munster Halvari et al. 2012 (++)

<sup>6</sup>Kakudate et al. 2009 (+)

<sup>7</sup>Clarkson et al. 2009 (+)

<sup>8</sup>Little et al. 1997 (-)

<sup>9</sup>Fjellstrom et al. 2010 (++)

<sup>10</sup>Kasila et al. 2006 (+)

<sup>11</sup>Kasila et al. 2008 (+)

### **3.3 What is the most effective mode of delivery (channel) of oral health promotion?**

Eighteen studies examined oral health promotion delivered in a variety of different ways (ten were randomised controlled trials, two were cluster randomised controlled trials, two were quasi- experimental studies, one was a before and after study without a control group, one was qualitative, one was an audit and one was a pilot study). The studies varied in quality and there was heterogeneity in the populations and outcomes evaluated. Most importantly they examined the effectiveness of oral health promotion delivered in a variety of different ways. We have therefore formed three sub groups: the first is effectiveness of oral health promotion delivered verbally by dental health professionals; the second is the effectiveness of OHP (oral health promotion) using leaflets/written material and the third is the effectiveness of oral health promotion delivered in modes other than by verbal advice or leaflets.

#### **Research Questions:**

- 3.3.1 Is verbal delivery of oral health promotion messages by oral health professionals effective?**
- 3.3.2 Is delivery of oral health promotion by leaflet/written material effective?**
- 3.3.3 Is delivery of oral health promotion by means other than leaflet/written material effective?**

### 3.3.1 Is verbal delivery of oral health promotion messages by oral health professionals effective?

Study	Design	Quality	Validity	Population	Intervention(s)	Comparison(s)	Outcome(s)	Positive findings
Blinkhorn et al. (2003)	Cluster RCT	+	+	Attending children and parents	Dental health counselling by hygienist	Toothbrush and paste	Dmft/s	No
Hausen et al. (2007) Finland	RCT	+	+	11 and 12 year olds	Dental health counselling by hygienist (plus toothpaste and xylitol)	Normal care including fluoride and oral hygiene	Dmfs	Yes
Hugoson et al. (2003, 2007) Sweden	RCT	+	++	Young adults	Dental prophylaxis and oral hygiene instruction	Nil	Plaque levels Gingivitis Repaired behaviour	Yes Yes Yes
Jonsson et al. (2006)	RCT	-	+	Adults	OHP by dental hygienist	Clinical assessment only	Plaque levels (PI) Gingival health Reported behaviour	Yes Yes Yes
Lepore et al. (2011) USA	Quasi-experimental	-	-	Paediatric patients	Oral hygiene and diet information by dentist	Routine advice and topical fluoride	S Mutans Plaque score Dmft Gingival health Reported behaviour	Yes Yes No Yes Yes
Weinstein et al. (2004, 2006)	RCT	-	+	Parents of young children	Motivational interviewing, video, and pamphlet	Pamphlet and video	New decay dmfs	Yes Yes
Jonsson et al. (2009) Sweden	Quasi-experimental (2 cases)	-	-	Periodontal patients	Motivational interviewing at treatment	Unclear	Plaque Gingivitis Pocketing Reported behaviour	Yes Yes Yes Yes
Wang et al. (2010)	RCT	+	+	Parents of paediatric patients	Individualised verbal instruction plus visual tool	Standardised information	Attendance Child cooperation with treatment	Yes Yes

This section examined the evidence pertaining to the effectiveness of oral health promotion advice being given verbally by a dental health professional. Effectiveness was considered from the point of view of (a) increases in knowledge, (b) changes in behaviour, and (c) changes in oral health outcomes.

A study<sup>13</sup> (+) was carried out which tested the effectiveness of dental health educators in general dental practice. This was a two-cell, parallel group, cluster randomised, controlled clinical trial of two years' duration. Set in 30 general dental practices in North-West England, the participants were 269 mothers of 334 preschool children. Those in the test group were given visits to a dental health educator over a two year period to counsel mothers of at-risk, preschool children. The rest were held as a control. The main outcome measures were caries prevalence of the children and dental health knowledge, attitudes and toothbrushing skills of the parents. The statistical analysis controlled for the clustering of children within practices. After two years, 271 (81%) children and 248 (92%) mothers remained in the study. There was an 8% difference in the proportion of children who were plaque free between the groups in favour of the test group children but this was not statistically significant. There was also a difference of 0.57 dmft in favour of the test group, but again the difference was not statistically significant. The mothers in the test group were more knowledgeable, had better attitudes towards the dental health of their offspring, and had better toothbrushing skills than those in the control. Each two hour session to counsel ten parents cost £40. The authors concluded that primary care trusts should carefully consider the cost value of seconding dental health educators to counsel parents of regularly attending, at-risk, preschool children when considering how to utilise general dental practices to improve oral health.

Another study<sup>14</sup> (+) investigated whether DMFS increment can be decreased among children with active initial caries, by oral hygiene and dietary counseling, and by using noninvasive preventive measures. Except for children with learning difficulties attending special schools, all 11- to 12-year-olds in Pori, Finland, with at least one active initial caries lesion, were invited to participate in the study and were then randomised into two groups. Children in the experimental group (n = 250) were offered an individually designed patient-centered preventive programme aimed at identifying and eliminating factors that had led to the presence of active caries. The program included counseling sessions with emphasis on enhancing the use of the children's own resources in everyday life. Toothbrushes, fluoride toothpaste, and fluoride and xylitol lozenges were distributed to the children. They also received applications of fluoride/chlorhexidine varnish. The children in the control group (n = 247) received basic prevention offered as standard in the public dental clinics in Pori. For both groups, the average follow-up period was 3.4 years. A community level program of oral health promotion was also run in Pori throughout this period. Mean DMFS increments for the experimental and control groups were 2.56 (95% CI 2.07, 3.05) and 4.60 (95% CI 3.99, 5.21), respectively (p < 0.0001): prevented fraction 44.3% (30.2%, 56.4%). The results show that by using a regimen that includes multiple measures for preventing dental decay, caries increment can be significantly reduced among caries-active children living in an area where the overall level of caries experience is low.

Hugoson et al<sup>12</sup> (+) examined the effect of different preventive programmes on oral hygiene. Four hundred subjects aged 20–27 years, 211 males and 189 females, participated in the study. They were recruited from a Public Dental Service clinic and from a private dental practice in Jönköping, Sweden. The effect of the programmes on plaque and gingivitis was

evaluated over a three year period. The programmes included activities that were adapted for individuals as well as for groups. This randomised, blinded, parallel, controlled clinical study examined the effectiveness of four dental health programmes. In one group the participants had traditional oral care, in the second group information about caries/gingivitis was presented using flip charts and oral hygiene instruction was given. They also had their teeth professionally cleaned six times per year. In a third group, no professional cleaning was given, and in the fourth group, the programme was conducted as a group activity. Plaque indices (PLI) and gingival indices (GI) were used to evaluate the programmes. All programmes resulted in a decrease in PLI and GI. The greatest decrease was found in the group that was followed-up every two months. Professional tooth cleaning was non-significant for the clinical result. Gingival health at baseline, participation in any of the test programmes, and knowledge of the dental diseases caries, gingivitis or periodontitis were significant predictors of good gingival health. The study confirms the efficacy of three different preventive programmes in reducing supragingival plaque and gingival inflammation. Professional tooth cleaning provided no clinical benefit beyond that derived from individual and group-based health education.

At the ten year follow up<sup>15</sup> (+), the individuals' knowledge was undiminished while behaviour concerning approximal cleaning had reduced from 90% to approximately 70% of the individuals. A slight behavioural change concerning number of snacks was found in the course of the study with a shift towards fewer snacks per day. The study showed that simple prophylactic models have an effect on, and maintain, young adult individuals' knowledge and behaviour concerning oral health, and that new knowledge is remembered for long periods of time, while changes in behaviour are maintained less well. Moreover, it was found that the scope of the prophylactic programme measured in time and cost had little effect on the long-term result.

An experimental study<sup>16</sup> (-) aimed to determine whether a "report card-like" oral health action plan was effective in improving oral health behaviours in a sample of 69 participants aged one to six years. Participants were divided randomly into control and intervention groups. Patients in both groups received examination topical fluoride and professional cleaning. The control group received routine oral hygiene instruction and diet advice. The intervention group received the same, but in addition they also received a personalised oral health action plan. Data collected included dmft, plaque score, *Streptococcus mutans* levels and oral health behaviours. Participants in the intervention group received an oral health action plan that included: 1. Child's current caries-risk status; 2. Identification issues of concern; 3. One "goal" to improve on for the next visit. All participants returned after two months for follow-up examination and data collection. The intervention group had lower *S. Mutans* counts, lower plaque scores and improved gingival health ( $p<0.05$ ).

Another study<sup>17,18</sup> (-) compared the effect of motivational interviewing counseling treatment with that of traditional health education, on parents of young children at high risk of developing dental caries. The authors enrolled parents of 240 infants aged six to 18 months in the study and randomly assigned them to either a motivational interviewing intervention group or a traditional health education (control) group. Parents in the control group received a pamphlet and watched a video. Parents in the intervention group also received the pamphlet and watched the video; in addition, they received a personalized counseling session and six follow-up telephone calls. After one year, children in the intervention group had 0.71 new carious lesions ( $SD = 2.8$ ), while those in the control group had 1.91 ( $SD=4.8$ )

new carious lesions ( $t[238] = 2.37$ , one-tailed  $P < 0.01$ ). They concluded that the intervention was a promising approach which may lead parents and others to better accept dental recommendations about preventing caries in their children.

Jonsson et al.<sup>19</sup> (-) reported a randomised control trial to test an intervention aiming to encourage patients to increase their responsibility for their oral self-care. A total of 75 individuals were re-examined one to two years after their initial therapy at the Department of Periodontology, Uppsala County Council, Sweden. Patients who exhibited insufficient compliance (37 individuals) were included in a randomised single-blind control trial to test the intervention. The intervention consisted of a hygienist engaging in a dialogue with the patient which aimed to increase their feeling of empowerment. The process aims for the patient to make decisions about their goals and how to achieve them, and the hygienist assists the patient in the achievement of those goals. Patients were examined at baseline and three months after the intervention. The results demonstrated that patients in the intervention (IV) group increased their interdental cleaning and reduced their plaque index significantly compared with the control group. The former also reduced the number of periodontal pockets  $> 4$  mm significantly from baseline until after the hygiene treatment. The majority of the individuals in the IV group reported that the written commitment had influenced their oral self-care habits in a positive direction. The intervention enhanced the client participation in the treatment process and improved the compliance and oral self-care behaviours. It also contributed to a reduction in periodontal pockets.

A quasi-experimental study with a multiple-baseline design was carried out in Sweden<sup>4</sup> (-) in a periodontal referral clinic. Please see page 18 for more details.

Finally, a study examining the effect of using illustrations when educating parents about their child's upcoming operative appointment, on parents' and their children's' responses to the treatment, was reported by Wang et al.<sup>20</sup> (+). Data were collected from 189 parents of four to ten year-old pediatric dental patients who needed operative treatment. The parents received information about their child's upcoming operative visit in the intervention group with the support of standardised illustrations (flip chart), and/or individualised drawings. Parents and providers responded to surveys following the operative appointments. Behaviour ratings were assessed on a scale of 1 (definitely negative) to 4 (definitely positive). The data showed that parents in the intervention group felt that the information was more helpful than the parents in the control group felt (control group satisfaction score = 3.8, intervention group satisfaction score = 4.18,  $p < 0.05$ ). Parents who were informed only verbally were more likely to (a) miss the operative appointment (47% vs 19%/16%/10%;  $p < 0.001$ ) and (b) remain in the operatory during treatment (47% vs 18%/26%/19%;  $p < 0.01$ ) than parents who received standardised illustrations, individualised illustrations, or both illustrations respectively. Patients/children whose parents had received verbal information, compared to those parents who had received any form of illustrative information, behaved more negatively during appointments (Frankl score 3.30 vs 3.54  $p = 0.04$ ). The authors concluded that educating parents about the basic disease process of dental caries with the aid of illustrations increased parents' cooperation with the recommended dental treatment for their children and improved their children's behaviour during the treatment.

### **Summary and Evidence Statement**

The key finding is therefore that patient/parent knowledge and behaviour (including oral hygiene) is improved by the giving of advice/instruction by a dental professional. However there is no substantial evidence that oral health promoting advice reduces caries unless

fluoride is provided (in toothpaste, varnish, rinse or tablets). The data supporting this conclusion includes three RCTs (+), one cluster RCT (+), two low quality RCTs (2-), and two quasi-experimental studies (2-). The evidence supporting our conclusions should be considered strong.

### Evidence Statement 2

Two RCTs (reported in three papers) carried out in Sweden and Finland<sup>12,15,19</sup> (1+, 1-) showed that oral health promotion delivered verbally by dental health professionals improved adult and child patients' knowledge levels, and reported behaviours. However a cluster RCT in the UK involving young children<sup>13</sup> (+) failed to demonstrate that advice from an oral health educator improved caries (dmf intervention = 2.65 (SD 2.5), dmf control = 3.22 (SD 2.85)) or that it improved knowledge to a statistically significant extent (intervention score = 47, control = 39). One RCT<sup>14</sup> (+), in which fluoride toothpaste was also distributed, demonstrated a reduction in caries increments (DMFS increments in intervention 2.56 (confidence interval (2.07) – (3.05)), control 4.60 (confidence interval (3.99) – (5.21)). Size of effect for knowledge and behaviour changes cannot be quantified/compared across studies as there is no single accepted unit of measurement for dental health knowledge or behaviour. Three randomised trials in Scandinavia, reported in four papers<sup>12,14,15,19</sup> (2+, 1-), all showed that oral health promotion delivered by an oral health professional resulted in improved oral hygiene. A quasi-experimental study in the USA<sup>16</sup> (-), and another in Sweden<sup>4</sup> (-) showed improvements in plaque, gingivitis, and reported oral hygiene behaviour. However, the USA study showed no effect on dmft (unchanged in intervention and control groups) in the short term (2 months). One RCT reported in two papers<sup>17,18</sup> (-) showed an effect on caries incidence (New Caries: Test 0.71, Control 1.91; p<0.1). This intervention included fluoride varnish application along with motivational interviewing. One RCT in the USA<sup>20</sup> (+) showed that educating parents could positively influence children's behaviour in the dental surgery (intervention behaviour 3.62, control behaviour 3.35, p<0.05). Overall there is strong evidence suggesting that verbal oral health promotion by dental professionals has a positive effect on patient knowledge, behaviour and gingival health, but the effect is insufficient to impact on caries levels unless the use of fluoride is included.

The evidence reported is directly applicable to UK populations as disease levels, behaviour and expected behaviours in the countries where the studies took place are largely similar to the UK.

<sup>4</sup>Jonsson et al. 2009 (-)

<sup>12,15</sup>Hugoson et al. 2003, 2007 (+)

<sup>13</sup>Blinkhorn et al. 2003 (+)

<sup>14</sup>Hausen et al. 2007 (+)

<sup>16</sup>Lepore et al. 2011 (-)

<sup>17,18</sup>Weinstein et al. 2004, 2006 (-)

<sup>19</sup>Jonsson et al. 2006 (-)

<sup>20</sup>Wang et al. 2010 (+)

### 3.3.2 Is delivery of oral health promotion by leaflets/written material effective?

Studies	Design	Quality	Validity	Population	Intervention(s)	Comparison	Outcome	Positive result			
Humphris et al. (2001 2001, 2004 UK)	RCT	+	+	Adult dental patients	Leaflet	Nothing	Knowledge Intended behaviour	Yes Yes			
Humphris et al. (2004)	Parallel RCT	+	++	Adult dental patients	Leaflet	Nothing	Knowledge Risk perception	Yes Yes (marginal)			
Humphris et al. (2003, 2004) UK	Parallel RCT	+	+	Adult medical and dental patients	Leaflet	Nothing	Knowledge Attitudes Intended behaviour	Yes Yes Yes			
Boundouki et al. (2004) UK	RCT	+	+	Adult dental patients	Leaflet	Nothing	Knowledge distress	Yes Yes (marginal)			
Lees et al. (2000) UK	RCT	+	-	Orthodontic patients	Written Video and verbal information	Three group comparison	Plaque Gingivitis Behaviour		Plaque	Gingivitis	Behaviour
								Written	No	No	No
								Video	Yes	Yes	No
								Verbal	Yes	Yes	No
Wanless (2001) UK	Audit	-	+	Oral health promoters	Audit of leaflets	Not applicable	Readability	Yes			
Ashford (1998)	Qualitative	+	N/A	Students	Focus group	Not applicable	Verbal Communication preferred	N/A			

This section examines the evidence of effectiveness of delivering oral health promotion messages by leaflet or in written form. We examined the evidence of effectiveness of leaflet oral health promotion on knowledge, attitudes and aspects of behaviour but could find no evidence concerning the effect of oral health promotion by leaflets on oral health outcomes.

Humphris et al.<sup>21,22</sup> (+) investigated three hypotheses: first that a patient information leaflet (PIL) would enhance patient perception of risk of oral cancer; second that the positive effect of the leaflet on knowledge would be confirmed as in previous studies; and third that these improvements would be associated with smoking behaviour. Adults (n=995) attending 20 general dental practices in Northern Ireland were invited to participate; 28 refused (response rate=97%). Patients were randomised into two groups. The experimental group received a PIL and then completed a self-report questionnaire, whereas the control group followed the same procedure without the PIL. Measures included a 36-item oral cancer knowledge scale and two items to assess risk perception. Usable data were available from 944 patients; mean (SD) age=42 (15), 65% female. Risk perceptions of oral cancer were minimally affected by the PIL ( $p=0.023$ ). This effect was demonstrable in smokers. Smokers were sixteen times (95% CI: 8–30) more likely to believe that they were at greater risk of oral cancer than non-smokers. A clear benefit of the PIL on patients' oral cancer knowledge was found, particularly for smokers and those with a history of smoking. These findings demonstrate that public awareness of smokers can be raised with written information, although health beliefs such as risk perceptions require more intensive intervention.

Humphris et al.<sup>22</sup> (+) also showed that smokers knew less about oral cancer than non-smokers ( $p< 0.05$ ) when access to the leaflet had been denied. On receipt of the leaflet, there was no difference in oral cancer knowledge between the smoking status categories of respondents. Evidence of reassurance about screening from leaflet exposure was supported by the second study. This research demonstrated an effect of a brief PIL to offset the decrement in oral cancer knowledge observed in primary care patients who use tobacco in comparison to their non-smoking counterparts. The leaflet reduced anxiety about oral health screening in smokers. Smokers with access to the leaflet were more reassured and less anxious about having an oral health screen (effect sizes: 0.30 and 0.32 respectively,  $p<0.05$ ).

Humphris et al.<sup>23</sup> (+) also attempted to determine if there was an immediate influence of a validated patient information leaflet (PIL) on patient anxiety and intention to have a screen for oral cancer in primary care attenders. The study involved patients (n=800) attending their primary health care provider. Fourteen general practices (eight dental and six medical) in the northwest of England took part. This was a randomised controlled trial with two arms: leaflets were provided in the intervention group, and leaflets were absent in the control group. The outcome measures were: intention to have an oral cancer screen, and anxiety towards a screen, along with perceived risk of oral cancer. Knowledge of oral cancer, self-reported dental service attendance history, and demographic variables were also collected. Patients who had read the oral cancer PIL demonstrated an increase in their intention to have a screen (Mann Whitney  $U$  test:  $z=-3.67$ ,  $p<0.001$ ) and reduced anxiety (Mann Whitney  $U$  test:  $z=-2.07$ ,  $p<0.05$ ). Subjective risk was not elevated by the extra information. Intention to have a screen was predicted by knowledge level and anxiety (odds ratios: 1.10 and 0.70 respectively, both  $p<0.001$ ). They concluded that the influence of an information leaflet appeared to have a positive effect on anxiety level and intentions to agree to receive an oral cancer screen.

In a further report Humphris<sup>24</sup> (+) described the immediate influence of a validated patient information leaflet (PIL) on oral cancer and knowledge in primary care attenders. The results showed that patients who had read the oral cancer PIL demonstrated a significant increase in knowledge regardless of clinical setting ( $F [1,739] = 246.24, p < 0.0001$ ). Patients showed improvements in selecting the correct signs and risk factors associated with disease. Immediate knowledge gain from a simple PIL about oral cancer was found and this was independent of the primary care facility, where the PIL was distributed.

Humphris et al<sup>25</sup> (+) reported a further a study which examined the influence of how a leaflet on mouth cancer improves knowledge, related attitudes and intention to accept a mouth screen. It was conducted as an RCT set in dental and medical waiting rooms in the North West of England. Nine hundred and forty nine patients from 16 practices were invited to participate, and standardised multi-item scales of six outcomes were measured including knowledge, beliefs and intention to accept an oral cancer screen. A patient information leaflet was given to an intervention group of patients. A single sheet questionnaire was completed by both groups of patients immediately following leaflet administration in the intervention arm of study; *t* tests were used to compare outcome variables between patients with and without access to the leaflet. The participation rate was high (91%). A significant increase in knowledge ( $p < 0.001$ ) and improved screening intentions ( $p = 0.003$ ) indicated that patients benefited from having access to the leaflet. Anxiety was not raised with leaflet exposure and some beliefs about the screening procedure appeared to be slightly improved by reading the leaflet ( $p < 0.05$ ). The study supported previous findings of an immediate positive effect of an information leaflet on patients' knowledge of oral cancer and willingness to accept an oral cancer screen.

Boundouki et al.<sup>26</sup> (+) aimed to determine the influence of a patient information leaflet (PIL) on mouth cancer to improve knowledge, reduce distress and increase intention to accept a mouth screen over a two month period. The design was a randomised controlled trial. Two dental practices in the northwest of England participated. Standardised multi-item scales of the three outcome measures were employed. The PIL was given to a randomised intervention group of patients in a waiting room. A single sheet questionnaire was completed by both groups of patients at baseline in the waiting room (immediately following leaflet administration in the intervention arm of study). The questionnaire was completed a second time at eight weeks by all patients returning them via post. Mann-Whitney *U*-tests comparing outcome variables between patients with and without access to the leaflet at baseline and 8 weeks were performed. Multiple logistic regression was used to predict re-reading of the leaflet at home. Useable replies were received from 317 patients (60% response rate). All measures showed some benefit of immediate exposure to the leaflet at follow up. Older patients, less initial knowledge, and self-reported smoking positively predicted the re-reading of the leaflet. The introduction of a mouth cancer PIL into dental practice may help to inform patients about oral cancer, moderate distress and encourage acceptance of an oral health screen.

In 2000, a study was reported<sup>27</sup> (+) which compared the effectiveness of written, videotape, and one-to-one instruction upon the knowledge, oral hygiene standard, and gingival health of subjects undergoing orthodontic treatment with a lower fixed appliance. Participants who had been recently fitted with fixed appliances were randomised into three groups: group 1 ( $n=21$ ) received written oral hygiene instruction; group 2 ( $n=22$ ) a watched a specially made

videotape; and group 3 (n=22) saw a hygienist for one-to-one instruction. Results were assessed in terms of improvement in knowledge concerning oral hygiene procedures, and of plaque and gingival index scores. Analysis of variance revealed no significant main effects or interactions at  $p = 0.05$ , although the difference in the plaque index scores before and after instruction was close to significance.

An audit<sup>28</sup> (-) that assessed the quality of oral health promotion leaflets/literature by examining their readability scores showed that leaflet design was often poorly thought through and did not always offer accessible advice to patients. As it is clear that readability is likely to impact on the effectiveness of written material, this study suggests that quality assurance/control of oral health promotion literature might be helpful. This study indicated a methodology by which the standard of readability and therefore, potentially the effectiveness of written material might be improved.

Finally Ashford<sup>29</sup> (+) reported a focus group study with 116 business students who did not attend the dentist; most written communications were cited as impersonal; health posters were perceived as negative as they were targeted at children only; and general media articles on dentistry were considered not to be very evident or interesting.

### **Summary and Evidence Statement**

The key finding from these studies is that conveying information via leaflet is an effective way of changing knowledge and perhaps attitudes, but there is no evidence to suggest that leaflets are better at conveying knowledge-improving information than other means, including verbal delivery. There is weak evidence suggesting that written information may not be as effective as verbal or video delivery for changing behaviour, and may not be some patients' preferred method of receiving information. Design and readability of leaflet information is important and auditable. The data supporting these conclusions are based largely on some high quality studies of the use of oral cancer leaflets in the UK. Assuming cancer is not the key factor in the effectiveness, it is assumed leaflets containing other oral health advice would be equally effective. If this is the case, the evidence supporting the evidence statement should be considered strong.

### **Evidence Statement 3**

Strong evidence from four RCT UK studies, reported in six papers<sup>21-26</sup> (4+), suggests that leaflets are an effective way of enhancing patients' knowledge of oral cancer and reducing associated fear and distress. One of these studies, reported in two papers<sup>21-22</sup> (+) showed that knowledge in the leaflet group increased more (30.87 (95% confidence intervals (30.51) – (31.24)) than in the control group (26.11 (95% confidence intervals (25.7) – (26.48)) effect size 1.29). An additional RCT<sup>27</sup> (+) presented moderate evidence that written information had less effect than verbal delivery or video delivery when educating orthodontic patients to improve oral hygiene (PI % change, written = 1.48, video = 12.32, verbal = 18.7).

A UK audit study by Wanless<sup>28</sup> (-) described how the readability of written oral health promotion material might be improved and a qualitative study<sup>29</sup> (+) indicated that young males considered written information to be purely functional and impersonal.

There is therefore strong evidence that leaflets are effective for increasing patient knowledge, but some weak evidence that they are less effective than other modes of delivery. They are potentially less acceptable to patients than personal delivery of information. No evidence was identified suggesting that oral health promotion in leaflets affect health outcomes.

This evidence is applicable to patients attending dental practices in the UK as this setting was relevant to the majority of these studies.

<sup>21,22</sup>Humprhis et al. 2003, 2004 (+)

<sup>22</sup>Humpris et al 2004 (+)

<sup>23,24,25</sup>Humphris et al. 2004, 2001, 2001 (+)

<sup>26</sup>Boundouki et al. 2004 (+)

<sup>27</sup>Lees et al. 2000 (+)

<sup>28</sup>Wanless. 2001 (-)

<sup>29</sup>Ashford. 1998 (+)

### 3.3.3 Is delivering oral health promoting messages by means other than leaflet and verbal advice effective?

Study	Design	Quality	Validity	Population	Intervention	Comparison	Outcome	Positive findings
Vachiravaropisain et al.(2005) Thailand	Cluster RCT	+	+	Patients attending Health Centres	Group discussion with/without dental health education	Individualised health education	Caries Behaviour	No Yes
O'Hara et al. (2008) USA	Pilot study	-	+	Patients with intellectual disability	Personal digital assistants	Not applicable	Oral Health (measure not specified)	N/A
Sbaraini et al. (2008)	Pre/post	-	+	Patients attending clinic	Assessment plus demonstration by dentist plus 5000ppm toothpaste	Not applicable	Caries Dietary health	Yes Yes

In this section we examined evidence about oral health promotion interventions which utilised methods other than the traditional giving of advice by a professional or the use of written materials. The evidence we found was sparse and heterogeneous.

Vachirvaropisain et al.<sup>30</sup> (+) conducted a cluster RCT in order to evaluate the process and outcomes of a participatory dental health education (DHE) programme in group discussions for preventing early childhood caries (ECC). In a one-year intervention programme set in 21 health centres, 520 mothers/caregivers of 6-19 month-old children who lived in a rural area of Thailand, took part in “active involvement” group discussions of oral health in the intervention group, and in the national teaching DHE programme in the control group. Health centre staff evaluated the impact on children’s dental cavitated carious increment and stated changes in oral health behaviour. After one year, the proportion of children using a toothbrush and brushing with fluoride toothpaste was 97% in the intervention group, significantly higher ( $p<0.01$ ) than the control group (58%). Night time bottle-feeding, falling asleep with a bottle and sweet snack diet behaviour appeared the same in both groups. The proportion of children with cavitated caries increment was 74.2% and 68.1% in the intervention and control groups respectively, i.e. the intervention group had slightly more newly developed caries during the study than the control group. Health centre staff were very supportive of the programme and suggested extending the participatory format to other child health topics. The authors concluded that the participatory dental health education model was shown to be a practical and effective method for increasing oral hygiene practice, but was not sufficient to prevent the development of ECC. This study, although valuable, is probably of limited applicability to the practice of oral health promotion in primary care dentistry in the UK.

The only study identified which examined the use of technology was a pilot project in the USA by O’Hara et al.<sup>31</sup> (-), which evaluated the potential of Personal Digital Assistant (PDA) technologies to improve the oral health of people with mild to moderate intellectual disabilities, chronic health problems and a long-standing history of poor oral health self-care. Oral health video and audio materials were prepared and transferred to PDAs. Patients were trained in the use of the PDAs at a regular dental appointment and the utilization of the PDA and any change in oral health status was tracked over the next six months. More than half of the 36 patients reported problems in keeping the PDAs functioning properly (mainly problems of keeping the batteries charged) for the duration of the project and 11 patients dropped out of the study. Ten of the remaining patients (40%) achieved improvement in at least three areas of oral health, which was measured on a four point scale along twelve dimensions including gingival inflammation, calculus, mouth odour, and tongue coating. The pilot project potentially brings a range of health promotion activities within the reach of people with limited health literacy, which may produce better self-management of chronic health conditions.

Sbaraini et al.<sup>32</sup> (-) reported the effectiveness of a ten-step, non-invasive strategy to arrest and remineralise early lesions. They gave patients a leaflet, verbal information, chairside demonstrations of plaque, toothbrushing instruction, tooth paste and gel, and topical fluoride applications. They considered the patient at risk, the status of each individual lesion, patient management, clinical management, and monitoring. A total of 100 out of 146 smooth non-cavitated carious surfaces at baseline had remineralised after six months, 99 per cent of sound surfaces remained sound, and 23 new lesions were observed in six of the 20 patients ( $\alpha_2 = 292$ , 7 df,  $p<0.001$ ). About half of proximal surfaces showing bitewing scores of grade 1

or 2 had regressed ( $\alpha^2 = 86.66$ , 56 df,  $p < 0.0001$ ), and 95 per cent of proximal sound surfaces at baseline, as diagnosed via bitewing radiographs, remained sound. The study showed that a non-invasive approach to caries management, which combined intensive coaching in oral hygiene maintenance, special home care and intensive monitoring in a clinic for high-risk patients, was able to reduce gingival inflammation and maintain low plaque levels, at least within the scope of this short-term study.

### **Summary and Evidence Statement**

The evidence concerning ways of delivering oral health promotion via methods other than verbal or written material is sparse. There is not yet any strong evidence to support the use of technology as no robust scientific studies of the effectiveness of doing so were identified. Group discussion may be helpful but this is probably not applicable in the context of general dental practice.

## **Evidence Statement 4**

### **4.1 Group discussions**

There is strong evidence of the effectiveness of group discussions compared to standard oral health promotion from a cluster RCT<sup>30</sup> (+) carried out in Thailand, which involved mothers of children aged 6-19 months. Both intervention and control groups received dental health education and toothbrushes. The intervention group also participated in group discussions conducted by trained moderators, which lasted about one hour. Group discussions may be an effective adjunct to traditional dental health education in altering behaviours, as 20% more mothers in the study reported that their child's teeth were brushed. The intervention did not have any effect on caries levels.

This evidence is probably not applicable to patients attending general dental practices in the UK as group discussions with mothers of young children do not fit with the current model of service delivery in the UK.

### **4.2 Technology**

There is weak evidence concerning the use of technology for oral health promotion from a small pilot study by O'Hara<sup>31</sup> (-), in which 36 people with intellectual disabilities and poor oral and general health were taught to use personalised digital assistants (PDAs), which reminded and prompted them to undertake oral hygiene practices. The effectiveness of the intervention was assessed by gathering anecdotal evidence from support care staff and by the individuals by measuring oral health status using a 4 point scale. More than half of the participants had difficulty with the technology, and 11 of 36 participants dropped out of the study. Of the remaining 25, ten achieved improvement in oral health. There is therefore no evidence that technology can be used to promote oral health in general practice.

The findings from this small study may not be applicable to the majority of people attending general dental practices.

### **4.3 Clinical intervention with advice**

There is weak evidence from a study in Australia<sup>32</sup> (-), in which high risk young adult patients (aged 18-35) underwent assessment of fortnightly coaching in oral hygiene and topical fluoride. 20 patients, who were examined after six months attained and maintained lower plaque levels, had decreased gingival inflammation, and had reduced rates of caries

progression. This study offers weak evidence that intensive oral hygiene instruction and fluoride application can improve oral health.

However, the evidence is only partially applicable to the UK population attending general dental practices due to differences between the UK and Australian system for dental care.

<sup>30</sup>Vachiraropjisain et al. 2005 (+)

<sup>31</sup>O'Hara et al. 2008 (-)

<sup>32</sup>Sbaraini et al. 1994 (-)

### 3.4 What is the content of oral health messages and how does this influence effectiveness

Study	Design	Quality	External Validity	Population	Intervention	Comparison	Outcome	Positive findings
Harris et al. (2002) UK	Survey	-	++	Dentists	Focus Group questionnaire	Not applicable	Significant numbers of GPs not adhering to guidelines re. fluoride toothpaste	N/A
Witton et al. (2013) UK	Survey	+	+	Dentists	Questionnaire	Not applicable	Existence of various barriers to prevention	N/A
Ashkenazi et al. (2014) Israel	Survey	-	-	Hygienists	Oral Hygiene instruction	Not applicable	Average of 4 minutes spent on oral hygiene	N/A
Holloway et al. (1994) UK	Qualitative (+ survey)	+	N/A	Dentists	Focus group Interview	Not applicable	Variability in advice given especially dietary	N/A
Threlfall et al. (2007) UK	Qualitative	+	N/A	Dentists	Interview	Not applicable	Advice not targeted to patients	N/A
Jensen et al. (2014) Sweden	Qualitative	++	N/A	Oral Health Professional	Focus Group Interview	Not applicable	Limited knowledge re. fluoride toothpaste	N/A

In this section we sought to synthesize any evidence concerning the content of oral health messages in order that conclusions could be drawn about preferred and most effective content.

In 2014, Jensen et al.<sup>39</sup> (++) published a study in which the aim was to explore oral health professionals' (OHPs') perspectives regarding their strategies, considerations and methods when teaching their patients the most effective way of toothbrushing with fluoride (F) toothpaste. A qualitative research method was used to collect data. Five groups of OHPs, including dentists, dental hygienists and dental nurses were interviewed (n=23). The interviews were analysed using manifest and latent qualitative content analysis. Data were systematically condensed and coded to the relevant phrases that identified their content. Three themes were identified: (a) strategies and intentions; (b) providing oral hygiene information and instruction; and (c) barriers to optimal oral healthcare education. Health promotion and seeing to the patients' best interest were driving forces among the OHPs as well as personal success in their preventive work. They focused on toothbrushing techniques more than on how to use F toothpaste. Barriers to oral health information were to some extent, the opinion of the OHPs, that some patients were impossible to motivate or that patients already knew what to do. The OHPs described toothbrushing with F toothpaste as very important, although the plaque removal perspective dominated. They did not focus on how to use F toothpaste, because they believed that knowledge about and appropriate behaviour concerning F toothpaste were already familiar to their patients.

Harris et al.<sup>37</sup> (-) attempted to describe the knowledge and practice of general dental practitioners (GDPs) (n=329) working in Liverpool (where there is no milk fluoridation programme), St Helens and Knowsley, and the Wirral (where children have fluoridated milk in schools and preschools) regarding the advice about fluoride toothpaste that was given to child patients and their parents. Data were collected via a postal questionnaire sent to all 329 GDPs working within the three areas. GDPs working in more than one of the areas, and those working in specialist orthodontic or oral surgery practices were excluded. Two hundred and thirty-four (71%) questionnaires were completed and returned. Only 3% of dentists said that no-one in their practice gave advice on the concentration of fluoride toothpaste to be used. For caries free children under seven years of age, only 64% of GDPs gave advice concerning the concentration of toothpaste which accorded with the available clinical guidelines (British Society of Paediatric Dentistry). 28% of GDPs contradicted the guidelines by advising children under 7 with high caries to use a low-fluoride toothpaste. Although 59% of GDPs in the fluoridated milk areas asked the child whether they had fluoridated milk at school, they did not appear to alter the advice given regarding the use of fluoridated toothpaste. The study showed that a significant number of GDPs did not adhere to clinical guidelines relating to the use of fluoride toothpaste when giving advice to their child patients.

A study by Holloway et al.<sup>33</sup> (+) with 50 general dental practitioners working under a capitation payment system for the treatment of children, showed that they all thought that prevention on selected patients was of value to their practice. They said that prevention enhances the reputation of the practice, adds to the job satisfaction of the dentist and is part of modern dental philosophy. However, only when practised selectively would it be cost-beneficial. The most popular preventive treatments were fissure sealants (particularly when used on selected patients), oral hygiene demonstrations and, among a group of enthusiastic dentists, dietary counselling. Dentists who employed hygienists had significantly higher mean preventive awareness scores than those who did not.

A qualitative study by Threlfall et al.<sup>34,35</sup> (+) assessed the content of preventive advice and care offered by general dental practitioners to young children. This qualitative study using semi-structured interviews in the North West of England involved 93 general dental practitioners practicing within the general dental service. Each dentist was interviewed about the care they provide to young children. The interviews were recorded, transcribed and analysed using a constant comparative method. Preventive advice given to parents of young children was usually about sugar consumption and tooth brushing behaviour, but the emphasis and specific messages provided varied among the general dental practitioners. Use of fluorides varied considerably, suggesting that some dentists either have reservations or are unclear about the appropriate use of fluorides. The study indicates important variations in the content of oral health promoting messages.

From the same interviews, Threlfall et al.<sup>35</sup> (+) also reported in a second paper that children with caries were more likely to be questioned about diet and oral hygiene if dentists believed the parents to be motivated. If they were, the dentist was more inclined to spend time providing advice. Most dentists seemed to believe that education was the key to preventing caries and gave preventive advice in the form of a short educational talk. There was little use of visual aids or material for parents to take home. Preventive advice was given in an ad hoc way with no formal targeting and no props or additional materials. The authors concluded that the use of visual aids, providing materials for parents to take home, and greater emphasis on partnership would help improve the impact of advice.

Witton et al.<sup>36</sup> (+) investigated the barriers and facilitators influencing the delivery of prevention in accordance with a national guideline (Delivering Better Oral Health, Department of Health England) in health service dental practice. Self-completion questionnaires were sent via two mailings to all 508 dentists registered to work in health service general dental practice in Devon, South West England. In total, 266 questionnaires were returned (52% response rate). Examples of barriers and facilitators were evident at various organisational levels of dentistry. These were principally the healthcare system, practice (dental office) arrangements, and professional factors. Respondents gave positive responses to questions concerning the flexibility (53%) and benefit of the guideline (63%) and they tended to indicate that they didn't perceive problems in changing their old routines (58%). Opinion was divided among respondents on whether they felt patients followed their advice (49%). There was overall agreement that delivering prevention in practice is problematic if there are insufficient staff (68%), time (60%) or facilities (53%). Most respondents felt adequately trained to deliver the evidence based prevention guidance (59%). However, 32% of practitioners were likely to give advice which did not comply with official guidance. This study identified barriers and facilitators to the delivery of prevention guidance in this group of health service dentists and showed that no single factor was viewed consistently as more important than any others.

In Israel, Ashkenazi et al.<sup>38</sup> (-) investigated the extent to which dental hygienists target their efforts toward patients' oral hygiene instruction. A population of 179 dental hygienists who attended an annual meeting were given a structured anonymous questionnaire to assess information concerning the content of their advice when instructing patients about oral hygiene measures. The dental hygienists were females aged 21 to 68 years (mean age  $39.05 \pm 18.18$ ); 49.7% worked in private practice, 21.7% in public practice, and 28.57% in both. Overall, 70.9% reported that they provided oral hygiene instruction to all their patients; 28.5% to most of their patients; and 0.6% reported that they never provided oral hygiene

instruction. Among the participants, 54.5% reported giving instruction at every treatment, 41% at every periodic treatment, and 4.5% only on first meeting. The reasons for not instructing their patients included: the patient already knowing how to brush (61.5%); the patient appearing uninterested (23.6%); and lack of time (21.7%). Most of the participants (77.7%) reported giving the same hygiene instructions for patients at high and low risk for caries and/or periodontal disease. Participants did not always use demonstration methods in order to improve their patients' performance.

### Summary and Evidence Statement

The available evidence about the content of oral health promotion messages in UK dental practices is limited to surveys of content. Little work has been carried out to determine how the content of oral health messages influences the extent to which they are positively received and acted upon.

#### Evidence statement 5

Strong evidence about the content of oral health promotion was derived from six studies, four of which were carried out in the UK (one study was reported in two papers)<sup>33-37</sup> (3+, 1-), one in Israel<sup>38</sup> (-), and one in Sweden<sup>39</sup> (++) . These studies explored the content of oral health promotion which is given in general practices. None of these studies examined the effectiveness of the oral health promotion. One study<sup>37</sup> (-) indicated that 28% of the advice given about fluoride did not comply with British Society of Paediatric Dentistry guidelines and another study<sup>36</sup> (+) showed that 32% of practitioners were likely to give advice which did not comply with official guidance. Two qualitative studies<sup>34,35,39</sup> (1+, 1++) showed that the content of the oral health promotion advice given, depended on the practitioner's view of what the receiver might be receptive to. Two studies<sup>33,38</sup> (1+, 1-) indicated that oral hygiene instruction was the preferred route for giving advice.

There is therefore moderate evidence that the content of oral health promotion messages given in practice does not always accord with guidelines and official advice. There is moderate evidence that content is tailored to the patients' needs, expectations and apparent motivations. There is no evidence as to how the content of oral health promotion impacts its effectiveness, as none of the studies exploring content assessed the impact of content on effectiveness.

This evidence is applicable to dental practice in the UK.

<sup>33</sup>Holloway et al. 1994 (+)

<sup>34,35</sup>Threlfall et al. 2007 (+)

<sup>36</sup>Witton et al. 2013 (+)

<sup>37</sup>Harris et al. 2002 (-)

<sup>38</sup>Ashkenazi et al. 2014 (-)

<sup>39</sup>Jensen et al. 2014 (++)

### 3.5 What influence do 'receiver' characteristics have on the effectiveness of oral health promotion?

Study	Design	Quality	Validity	Population	Intervention	Comparison	Comparison	Outcome	Positive findings
Levesque et al. (2009) Canada	Qualitative	+	N/A	Individuals home on welfare	Development of Oral Health Promotion materials via collaborative approach	Not applicable	Not applicable	Improved content of information	Recipients identified with the information given
Loignon et al. (2010) Canada	Qualitative	+	N/A	Dentists with exposure to poverty	Semi-structured interview	Not applicable	Not applicable	Themes of importance revealed	Empathy and communication considered important
Rajabiun et al. (2012) USA	Qualitative	+	N/A	HIV+ patients	Interview	Not applicable	Not applicable	Oral Health behaviour influenced	Insight into behaviour in HIV+ patients
Poole et al. (2010) USA	Pre/post test	-	+	Scleroderma patients	DHE video + exercises	Not applicable	Not applicable	Gingival health Pocketing Oral hygiene	Yes No Yes
Grant et al. (2004) Australia	Qualitative	+	N/A	Disabled people's support workers	In depth interviews	Not applicable	Not applicable	N/A	Care workers and dentists perceive oral health differently
Meurman et al. (2001) Finland	Controlled Clinical Trial	-	+	Mutans streptococci positive children	Oral health promotion + Xylitol	Oral health promotion	Not applicable	Caries	Socioeconomic gradient in effectiveness

A key 'factor' in any oral health promotion intervention is the receiver of it. This section examines the studies in which the receiver group were defined by particular characteristics, and the analysis seeks to determine the influence of receivers' traits on the effectiveness of oral health promotion interventions.

Levesque et al.<sup>43</sup> (+) recognised that despite growing attention to the importance of cultural competence and communication skills training in dentistry, very few initiatives had been documented in relation to serving low-income populations. They produced an original video-based tool containing testimonies from six individuals who lived, or had previously lived on welfare. The videotaped interview data represented perceptions and experiences regarding their oral health, dental care service provision, and poverty in general. The content of the resulting DVD, allowed a collaborative knowledge translation which improved interaction between underprivileged people and dental care providers.

Levesque et al's work was followed by a study by Loignon et al.<sup>44</sup> (+) which aimed to identify specific approaches and skills that dentists needed for more effective treatment of people living in poverty, and addressing their needs. They conducted qualitative research based on in-depth interviews with eight dentists practising in disadvantaged communities of Montreal, Canada. Analyses consisted of interview debriefing, transcript coding, and data interpretation. Results revealed that, over years of practice, these dentists had developed a five-faceted socio-humanistic approach that involved: (1) understanding patients' social context; (2) taking time and showing empathy; (3) avoiding moralistic attitudes; (4) overcoming social distances; and (5) favouring direct contact with patients. The authors concluded that this approach should be evaluated terms of its impact on access to services and patients' experience of care.

Rajabiun et al.<sup>45</sup> (+) reported on an intervention for people who were HIV positive, in which participation resulted in better hygiene practices, improved self-esteem and appearance, relief of pain, and better physical and emotional health. In-depth exploration of the causes for these changes revealed a desire to continue with dental care due to the dental staff and environmental setting, and a desire to maintain overall HIV health, including oral health. These findings emphasise the importance of addressing both personal values and contextual factors in providing oral health-care services to people living with HIV or AIDS.

A study by Poole et al.<sup>41</sup> (-) investigated whether oral hygiene improved after people with scleroderma received structured oral hygiene instructions and facial and hand exercises. Seventeen people with scleroderma received a baseline dental evaluation including an examination for decayed or missing teeth, calculus, sites that bleed upon probing, measures of oral aperture, and the Patient Hygiene Performance Index. Upper extremity functioning including strength, joint motion, and dexterity were also measured. Participants received a structured home programme consisting of patient education on brushing and flossing techniques, hand and facial exercises, adapted dental appliances, and a six-month supply of dental products. At the end of the six-month intervention, there was a significant decrease (improvement) in mean PHP scores and a significant decrease in the number of teeth that bled on probing and with subgingival calculus. There were no differences in any of the upper extremity measures or oral aperture. Correlations between the upper extremity and oral measures showed associations between oral aperture and two of the dexterity measures and number of teeth with caries. The authors concluded that oral exercises and education regarding proper dental care may be useful in managing oral hygiene in persons with scleroderma.

Grant et al.<sup>42</sup> (+) undertook a qualitative study, based on a phenomenological approach, which explored and documented four situations in which positive oral health outcomes occurred for people with mental retardation and moderate to high support needs. Strategies and environmental factors that contributed to these oral health outcomes were identified through ten semi-structured interviews conducted with 'key-players' supporting the oral health of the people with disabilities. Participants included dental professionals, direct support workers, and other professionals who cared for their four people with disabilities. Common strategies expressed in the interviews included "giving it a go"; maintaining consistency; facilitating positive experiences; taking as much time as needed; respecting and encouraging choice making; timeliness and frequency of dental appointments; communication between support workers, dental professionals and the person with mental retardation; problem solving; assisting the person with disability to learn skills; and desensitisation. Contributing factors in the physical, social, and organisational environment also were identified.

In 2001, researchers in Finland<sup>40</sup> (-) studied an age cohort of 794 Finnish children (446 in the intervention group and 348 in the control group) who were followed from 18 months to 5 years of age. The children were screened for mutans streptococci (MS) in the dental biofilm. The main outcome measure was the proportion of children with dental caries (decayed, missing, or filled primary teeth > 0) at the age of five years. The intervention, targeted to MS-positive subjects in the intervention group only, was based on repeated health education to the caretakers and providing xylitol lozenges for the child. Dental hygienists carried out the programme. The intervention was effective in white-collar families [numbers needed to treat (NNT) = 3, 95% CI 2–11]. Factors significantly associated with caries at five years were MS colonisation at 18 months, and the occupation of the caretaker. Gender was also significant when incipient carious lesions were included in the index. Early risk-based oral health promotion, targeted to the families of MS-positive children, can reduce the risk for caries in white-collar families. For blue-collar families, different kinds of methods in caries prevention and support are needed.

### **Summary and Evidence Statement**

There is weak evidence that oral health promotion interventions designed for and with specific receiver groups are effective. However, the evidence is mixed; the target groups are highly heterogeneous and the outcome measures are variable. Firm conclusions regarding the effect of receiver group on effectiveness are hard to draw, but weak evidence exists to suggest that oral health promotion is most effective when the sender and receiver are of a similar social group and understand the context of each other's lives.

### **Evidence Statement 6**

There is weak evidence from one controlled clinical trial<sup>40</sup> (-), a before and after study<sup>41</sup> (-) and four qualitative studies<sup>42–45</sup> (4+), suggesting that oral health promotion, especially designed for very specific receiver groups, is effective in improving knowledge and attitudes. Two Canadian studies<sup>43–44</sup> (2+) using qualitative methodology, and one in Finland<sup>40</sup> (-) using quantitative methods, explored oral health promotion with deprived individuals. These studies suggest that an understanding of the social context of oral health and the development of relationships/collaborations are a vital part of developing oral health promotion interventions for the underprivileged. Three studies, one carried out in Australia,

and two in America, examined oral health promotion for very specific special groups – intellectually disabled<sup>42</sup> (+), HIV positive individuals<sup>45</sup> (+), and scleroderma patients<sup>41</sup> (-). An emergent theme from these studies is the need for collaboration and understanding between professional and receiver groups. Thus, there is moderate evidence that the perceptions of the receiver regarding their relationship with the sender, and the senders' understanding of the context of the receivers' lives and behaviour, are relevant to their acceptance and likelihood of acting upon oral health promotion messages.

These studies were all conducted outside of the UK so the results may only be partially applicable to people attending dental practices in the UK, as the cultural and economic provision for dental care for groups with special needs differs in North America, Australia, and the UK.

<sup>40</sup>Meurman et al. 2009 (-)

<sup>41</sup>Poole et al. 2010 (-)

<sup>42</sup>Grant et al. 2004 (+)

<sup>43</sup>Levesque et al. 2009 (+)

<sup>44</sup>Loignon et al. 2010 (+)

<sup>45</sup>Rajabiun et al. 2012 (+)

### 3.6 What influence do 'sender' characteristics have on the effectiveness of oral health promotion messages?

Study	Design	Quality	Validity	Population	Intervention	Comparison	Outcome	Positive findings
Schouten et al. (2003) Netherlands	Quasi-experimental Survey	-	-	Patients attending as emergencies	Observation	Not applicable	Patient and dentist satisfaction	N/A
Brocklehurst et al. (2013) UK	Qualitative	+	N/A	Dentists involved in OHP programme	Semi-structural interviews	Not applicable	Three key themes for success	N/A
Dyer et al. (2006) UK	Qualitative (+ survey)	+	N/A	Dentists (practice principles)	Interviews plus survey	Not applicable	Views of dentists who should do OHP	N/A
Jensen et al. (2014) Sweden	Qualitative	++	N/A	Oral Health Professions	Focus Group Interview	Not applicable	Limited knowledge regarding fluoride toothpaste	N/A

In this section we sought to determine which type of sender would be likely to be the best to undertake oral health promotion to give it the best probability of being effective.

The aim of a study by Schouten et al.<sup>46</sup> (-) was to examine the relations between patients' and dentists' communicative behaviour and their satisfaction with the dental encounter. The sample consisted of 90 patients receiving emergency care from 13 different dentists. Consultations were videotaped in order to assess dentists' and patients' communicative behaviour. Dentists' behaviour was coded by means of the Communication in Dental Setting Scale (CDSS), scores for patients' behaviour included among other things, the number of questions asked during the consultation. After treatment, patients filled out a questionnaire that assessed their satisfaction with their own and their dentist's communicative behaviour. Dentists also filled out a satisfaction questionnaire after each consultation. Results showed that dentists' satisfaction could not be explained by patients' or dentists' communicative behaviour. Patients' satisfaction was mainly influenced by the communicative behaviour of the dentist. Not only is patient satisfaction positively related to the communicative behaviour of dentists, but the principle of informed consent requires dentists also to inform their patients adequately enough for them to reach a well-informed decision about the treatment.

A study by Dyer et al.<sup>48</sup> (+) investigated the factors that might influence the provision of general health promotion through seven different health interventions by dental teams in general dental practice. A mixed-method approach was used comprising cross-sectional qualitative research using semi-structured interviews of a purposive sample of ten practice principals, and a cross sectional survey of a practice principal from every dental practice in South Yorkshire, using a self-complete questionnaire. Two core categories emerged from the qualitative data: seeing health or disease; and practitioners' views of the structure of dental practice. The former refers to the participants' general outlook and cut across many dimensions constituting the structure of dental practice. Health-orientated dentists were more likely to be involved in prevention and were more open-minded to expanding the dental team's role into general health promotion. However participants perceived that barriers existed to involvement such as time and financial factors, current workload and lack of personal skills. The response rate of useable questionnaires in the cross sectional survey was 84%. Reported levels of involvement in general health promotion were low. Most frequently reported barriers were 'insufficient funding' and 'poor use of time'. 'Poor use of time' and 'lack of training/knowledge' were reported less frequently for professionals complementary to dentistry (PCDs) than dentists ( $p<0.05$ ). Most dentists agreed that PCDs could be trained to deliver health interventions and would be happy for PCDs to do so in their practice if reported barriers were removed. Although dental teams' involvement in general health promotion is low, there is willingness to increase involvement, particularly among health-orientated dentists. Some reported barriers to involvement might be removed by impending changes to the General Dental Service in England. Other important factors include a lack of education and workforce shortages of dentists and PCDs. Respondents indicated a high regard for PCDs and there was broad agreement that they were suitable to be involved in this work.

A further qualitative study<sup>47</sup> (+) examined the perceptions of dentists who led a health promotion programme called "Baby Teeth DO Matter". The clinical setting was in General Dental Practice and participants were General Dental Practitioners in the Greater Manchester-wide prevention programme "Baby teeth DO Matter". The purpose of the study was to determine the perceptions of involved clinicians. Semi-structured interviews were

undertaken with a variety of participants in a health promotional programme facilitated by a shadow Local Professional Network. These were then recorded and transcribed verbatim. The transcripts were line numbered and subjected to thematic analysis to develop a coding frame. Overarching themes were developed from the coded transcripts by organising them into clusters based on the similarity of their meaning and checked against the coded extracts and the raw data. Eight codes were generated: 'Success of the project'; 'Down-stream to up-stream'; 'Importance of clinically led and clinically owned'; 'Keeping the approach simple'; 'Importance of networking'; 'Importance of Dental Public Health'; 'Importance of task and finish'; and 'Threats to the future of the Local Professional Network'. These were organised into three over-arching themes. 'Clinically Led and Clinically Owned' projects appear to empower local practitioners and add value. They encourage community-facing practitioners, build capacity and develop personal skills, all in accordance with the fundamental principles of the Ottawa Charter. Distributed leadership was seen to be effective, and Dental Public Health input "Task and Finishing" resources, and clarity of communication were all considered to be of critical importance.

In 2014, Jensen et al.<sup>39</sup> (++) published a study in which the aim was to explore oral health professionals' (OHPs') perspectives regarding their strategies, considerations and methods when teaching their patients the most effective way of toothbrushing with fluoride (F) toothpaste. A qualitative research method was used to collect data. Five groups of OHPs, including dentists, dental hygienists and dental nurses were interviewed (n=23). The interviews were analysed using manifest and latent qualitative content analysis. Data were systematically condensed and coded to the relevant phrases that identified their content. Three themes were identified: (a) strategies and intentions; (b) providing oral hygiene information and instruction; and (c) barriers to optimal oral healthcare education. Health promotion and seeing to the patients' best interest were driving forces among the OHPs as well as personal success in their preventive work. They focused on toothbrushing techniques more than on how to use F toothpaste. Barriers to oral health information were to some extent, the opinion of the OHPs, that some patients were impossible to motivate or that patients already knew what to do. The OHPs described toothbrushing with F toothpaste as very important, although the plaque removal perspective dominated. They did not focus on how to use F toothpaste, because they believed that knowledge about and appropriate behaviour concerning F toothpaste were already familiar to their patients.

### Summary and Evidence Statement

The available evidence did not allow comparison of the effectiveness of oral health promotion given by different types of oral health professionals (e.g. dentist vs hygienist). However, the studies included in this section suggest that traits of the sender influence the effectiveness of oral health promotion. In particular the sender's values and attitudes about oral health and towards others seem to be important.

#### Evidence Statement 7

Evidence regarding the affect of sender characteristics was identified in four papers including one quantitative<sup>46</sup> (-) and three qualitative<sup>39,47,48</sup> (2+, 1++) studies. These studies explored aspects of the 'sender's' influence on oral health promotion and how the sender affects its potential effectiveness. A quantitative questionnaire study by Schouten<sup>46</sup> (-), which measured satisfaction with communication, gave weak evidence that a receiver's responses

were influenced by the dentist's ability to communicate. A qualitative study<sup>48</sup> (+) demonstrated that dentists who were networked to other oral health professionals, and committed to prevention were more positive about oral health promotion. Another qualitative study carried out in Sweden<sup>39</sup> (++) showed that oral health professionals often assume that patients have sufficient knowledge from other sources and do not need further advice. Two studies<sup>39,48</sup> (1++, 1+) suggested that holistically-thinking, health focussed (as opposed to curative disease focused) professionals were more positive about oral health promotion.

There is therefore moderate evidence from qualitative studies to suggest that the beliefs, attitudes and values of oral health professionals influence the likelihood of them participating in and being positive about oral health promotion. No studies directly compared the effectiveness of oral health promotion given by different members of the dental team, therefore there is no evidence concerning the comparative effectiveness of different oral health staff on the effectiveness of oral health promotion.

The evidence above is considered applicable to oral health promotion given in UK general dental practices.

<sup>39</sup>Jensen et al. 2014 (++)

<sup>46</sup>Schouten et al. 2003 (-)

<sup>47</sup>Brocklehurst et al. 2013 (+)

<sup>48</sup>Dyer et al. 2006 (+)

### 3.7 What influence does framing of oral health promotion messages have on their effectiveness?

No table is presented for this evidence statement as the evidence is from a single study.

This section reviews the evidence concerning how an oral health message is framed and whether this has an effect on how a message is received, perceived and utilised. There was very little evidence on this subject in the context of oral health promotion.

Arora<sup>49</sup> (-) utilised a  $2 \times 2$  factorial design to study the influence of framing and credibility on messages designed to encourage a dental visit. A total of four different adverts were designed to show various combinations of positive or negative framing of messages, with low or high credibility. The adverts were designed to resemble a professional (albeit black and white) appearance. Each advert had an introductory sentence followed by a list of benefits. For example, the headline for the high credibility advert stated: “*The National Institute of Dental Research*, part of the National Institutes of Health, has published its findings on dental health. The report states that “*Early detection of dental problems has resulted in savings of about \$100 billion (in 1990 dollars) from 1979 to 1989.*” Early Detection is the new watch word in dentistry.” The low credibility advert stated: “*Conventional wisdom states that early detection of dental problems can result in significant savings.* Thus, early detection is the new watch word in dentistry.” The body was the same for all adverts. Four benefits used in framing were: “Detect any cavity, determine if the gums are healthy and free of gingivitis, detect any build-up of plaque on your teeth and keep your original teeth for as long as you live.” However, for negative framing the attributes were shown as benefits forgone by not following the advocated message. The first benefit was stated as, “Will not be able to detect any cavity early” and so on. A hypothetical name was used for the dental office, Dr. Thomas’s office. The framing of the message and the credibility was accomplished in a similar manner as in previous studies (Maheswaran, Durairaj, Meyers-Levy, and Joan 1990, Meyerowitz and Chaiken 1987). Two booklets were prepared. One contained the instructions and the advertising stimuli (and filler adverts). Subjects were instructed to look at the following adverts as they would at any advert in a magazine. They were not informed as to which advert was the advertising stimulus and which adverts were fillers. They were further instructed that after they had looked at the adverts, they should put the booklet away and not refer to it further during the experiment. The second booklet contained the questionnaire. The subjects for the experiment were residents of a large midwestern city. The questionnaire included standard attitude and intention questions. The attitude toward the dental office was assessed using an eight-point semantic differential scale with end points as: good (bad) idea; wise (foolish) decision; and excellent (poor) choice. The intention was measured by asking the subjects to indicate the likelihood of choosing Dr. Thomas’s office for their dental exam. The end points were: very likely (unlikely). In addition, respondents were asked to indicate the likelihood of recommending dental exam to their friends. The end points of this eight-point scale were, very likely (unlikely). They were asked aided and unaided questions to test the manipulation of framing. Subjects were asked to write the benefits mentioned in the advert, to check whether the statements were worded positively or negatively (containing the word not), and the likelihood of receiving (or not receiving) the benefits mentioned in the advert. To test the manipulation for credibility, they were asked to indicate the importance of early detection of dental problems. The end points of the eight-point scale were: *important* and *unimportant*. Two statements were used to test the manipulation of framing. The statements were

designed to measure the gains (losses) associated with the dental exam. Each statement was measured on an eight point scale with end points as 'nothing at all' and 'great deal'. For the positive statement the mean scores were 5.81 (negative framing) and 6.23 (positive framing). The difference was significant at  $p<0.001$  (2 tail). The mean scores for the negative statement were 6.70 (negative framing) and 5.59 (positive framing). The difference was significant at  $p<0.001$  (2 tail). The manipulation test for credibility was based on the importance of early detection of dental problems. It is expected that the advert containing the reference to "The National Institute of Dental Research" would be perceived as more important. The test for difference in mean response was significant at  $p<0.01$  (2 tail). The mean values for low and high credibility were 6.08 and 6.67 respectively. These tests support the manipulation of credibility and framing in the experiment. The attitude towards getting the dental exam done was assessed using an eight-point semantic differential scale with end points as: good (bad) idea; wise (foolish) decision; and excellent (poor) choice. A reliability coefficient was calculated before arriving at the composite attitude score. The standardised reliability coefficient alpha was 0.92 indicating that the three statements are internally consistent. The influence of credibility and framing was tested using a two-way ANOVA. The main effects for credibility and framing were significant ( $p<0.001$ , and  $p=0.06$  respectively). The interaction effect was not significant ( $p = 0.15$ ). The intention to obtain the dental exam was measured using an eight-point scale with end points as 'not likely' and 'very likely'. Respondents were also asked to indicate the likelihood of recommending this exam to their friends. The influence of credibility and framing on intention, as well as recommending the service to their friends, was tested using a two-way ANOVA. The main effects for personal intention to use the dental service were significant for credibility and framing ( $p<0.001$ , and  $p<0.01$  respectively). The interaction effect is not significant ( $p=0.76$ ).

#### Evidence Statement 8

There is weak evidence from one study<sup>49</sup> (-) to suggest that the framing of oral health promotion messages should be positive. This study examined the influence of message framing and credibility on the receiver's attitudes and intentions in the context of oral health. This paper applied theories and previous study results to the oral health context. The study suggested that the application of prospect theory (in which decision making is affected by the perceived value of outcomes in the future) would imply that in relation to oral health service usage, messages should be framed negatively (in terms of losses if the behaviour is NOT taken up), but that health promoting messages should be framed positively (in terms of benefit if the suggested behaviour IS taken up).

This study is probably only partially applicable to the UK as it was carried out in the US and focused on attending a dental practice for an examination. Dental attendance is perceived differently in the UK and USA and therefore the applicability may be limited.

<sup>49</sup>Arora. 2000 (-)

### 3.8 What are the barriers and facilitators to effective oral health promotion?

Study	Design	Quality	Validity	Population	Barriers	Facilitator
Jensen et al. (2014) Sweden	Qualitative	++	N/A	Oral Health Profession	<ul style="list-style-type: none"> <li>• Lack of knowledge</li> <li>• Patients social status / education</li> <li>• Potential damage to relationship with patient</li> </ul>	<ul style="list-style-type: none"> <li>• Patient taking responsibility</li> <li>• Professional feeling satisfaction when improvements</li> <li>• Patients social status / education</li> <li>• Background OHP / adverts</li> </ul>
Ashkenazi et al. (2014) Israel	Survey	-	-	Hygienists	<ul style="list-style-type: none"> <li>• Time</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration</li> </ul>
Threlfall et al. (2007) UK	Qualitative	+	N/A	Dentists	<ul style="list-style-type: none"> <li>• Negative attitude and behaviour in patient</li> <li>• Lack of belief in patients' willingness / ability to change</li> <li>• Lack of skill / props</li> </ul>	<ul style="list-style-type: none"> <li>• Belief in the efficacy of what is being delivered</li> <li>• Clarity of underlying evidence</li> </ul>
Ashford (1998) UK	Qualitative	+	N/A	Students	<ul style="list-style-type: none"> <li>• Poor quality of information delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Building personal relationship</li> <li>• Effective communication</li> <li>• Verbal rather than written material</li> </ul>
Brocklehurst et al. (2013) UK	Qualitative	+	N/A	Dentist	<ul style="list-style-type: none"> <li>• Lack of impact</li> <li>• 'Top – down' approach</li> <li>• Administrative support</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to use own initiative</li> <li>• Simplicity of approach</li> <li>• Being part of network</li> <li>• Dental Public Health Support</li> </ul>
Rajabiun et al. (2012) USA	Qualitative	+	N/A	HIV+ patients	<ul style="list-style-type: none"> <li>• Attitude of staff</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness of link with HIV status</li> <li>• Sense of self-esteem feeling improved</li> <li>• Friendly supportive dental staff</li> </ul>
Loignon et al. (2010) Canada	Qualitative	+	N/A	Dentists with experience of poverty	<ul style="list-style-type: none"> <li>• Moralistic attitudes</li> <li>• 'Victim' blaming</li> </ul>	<ul style="list-style-type: none"> <li>• Time</li> <li>• Empathy plus understanding</li> <li>• Accepting compromises</li> </ul>
Grant et al. (2004) Australia	Qualitative	+	N/A	Supporters of people with disability	<ul style="list-style-type: none"> <li>• Negative experiences</li> <li>• Hurried approach</li> </ul>	<ul style="list-style-type: none"> <li>• Consistency</li> <li>• Respecting choice</li> <li>• Communication with dentist</li> </ul>
Witton et al. (2013) UK	Survey	+	+	Dentists	<ul style="list-style-type: none"> <li>• Lack of resources + support</li> <li>• Lack of sense of comprehension</li> <li>• Older and Healthy patient</li> </ul>	<ul style="list-style-type: none"> <li>• Good facilities, time resource</li> <li>• Sense that patient is receptive</li> </ul>
Williams et al. (2010)	Qualitative and survey	+	N/A	Patients attending health centre	<ul style="list-style-type: none"> <li>• Knowledge and behaviour not linked</li> </ul>	<ul style="list-style-type: none"> <li>• Single messages</li> <li>• Message delivery by a person</li> </ul>

Dyer et al. (2006) UK	Qualitative and Survey	+	N/A	Dentists	<ul style="list-style-type: none"><li>• Disease focused dentist</li><li>• Poor sense of competence</li><li>• Payment system</li></ul>	<ul style="list-style-type: none"><li>• Health focused dentist</li><li>• Perception of practice as health promoting</li><li>• Team approach</li><li>• Commitment</li></ul>
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Many of the studies which contributed evidence regarding the other research questions in the review, offered insights into the potential barriers and facilitators to effective oral health promotion. This section draws together the recurrent themes within the available evidence, concerning the factors which might enhance or diminish the probability of an oral health promotion intervention being effective.

Jensen et al.<sup>39</sup> (++) undertook a study to explore the oral health professionals' (OHPs') perspectives regarding their strategies, considerations and methods when teaching their patients the most effective way of toothbrushing with fluoride (F) toothpaste. For further details see page 48.

Ashkenazi et al.<sup>38</sup> (-) investigated the extent to which dental hygienists target their efforts toward patients' oral hygiene instruction. For further details see page 40.

In a study to increase understanding about how and to whom general dental practitioners provide preventive advice to reduce caries in young children, Threlfall et al<sup>34,35</sup> (+) used a qualitative study design using semi-structured interviews in the The North West of England. For further details see page 40.

Ashford<sup>29</sup> (+) reported a focus group study with 116 business students and lecturers who did not attend the dentist. Focus groups (of one hour duration) comprising 6-7 members, conducted over a period of 18 months, discussed five open-ended questions or statements. 116 non-attending males (aged between 25-34 years) consisting of professional lecturers (17%), full-time students (50%), and part-time students (33%) with varying income and education levels were included. A theoretical linear-sequential model related to patient behaviour was considered in relation to the timing of communications but this was not tested. Views of group members were collected concerning their attitudes, perceptions and experience of communications from General Dental Practitioners. Informative oral communications were considered as important during treatment. Most written communications were cited as impersonal; health posters were perceived as negative, being targeted at only children; and general media articles on dentistry were not very evident or interesting. However, a practice brochure was viewed as a handy communication tool. General Dental Practitioners should look carefully at all of their own methods of communication with patients (from oral to written) and consider the value of their marketing and all areas of communications, especially when considering non-attenders and males (aged 25-34).

Brocklehurst et al.<sup>47</sup> (+) used a qualitative approach to examine the perceptions of dentists who led a health promotion programme entitled "Baby Teeth DO Matter". For further details see page 47.

A qualitative study by Rajabiun et al.<sup>45</sup> (+) explored the impact on oral health-care knowledge, attitudes and practices among 39 people living with HIV/AIDS, participating in a national initiative aimed at increasing access to oral health care. For further details see page 43.

Loignon et al<sup>44</sup> (+) aimed to identify specific approaches and skills that dentists needed for more effective treatment of people living in poverty and addressing their needs. For further details see page 43.

Grant et al.<sup>42</sup> (+) conducted a qualitative study, based on phenomenological approaches that explored and documented four situations in which positive oral health outcomes occurred for

people with mental retardation and moderate to high support needs. For further details see page 44.

Witton et al.<sup>36</sup> (+) investigated the barriers and facilitators influencing the delivery of prevention in accordance with a national guideline (Delivering Better Oral Health, Department of Health England) in general dental practice. For further details see page 40.

Williams et al.<sup>50</sup> (+) assessed patient awareness, in a dental access centre, of a poster and leaflet campaign providing information about smoking and excess alcohol consumption as risk factors in the development of oral cancer. Additionally, the study explored dental patients' beliefs and perceptions about these risk factors. Posters and leaflets providing information about risk factors for oral cancer were displayed in the patient waiting areas of a dental access centre. Data were collected prospectively in relation to the smoking and drinking habits of patients attending the centre. This information was used to categorise patients into one of four groups ranging from low to high consumption. During triage, patients were asked if they had read any of the information about oral cancer that was on display. Patients in the high risk groups were asked to participate in a semi-structured interview that would explore their knowledge about risk factors and their views on the delivery of healthcare messages in relation to oral cancer. Data on risk status and exposure to the poster and leaflet campaign were collected for 1,161 patients attending during the study period. More than 50% of these patients were smokers, with 36% in the high or very high tobacco and alcohol use groups. Approximately 40% of patients within each consumption group had read some of the information available. Nine patients agreed to be interviewed and overall knowledge about risk factors for oral cancer, even after reading the information was poor. Dental access centres attract a significant number of patients with lifestyle habits that make them vulnerable to oral cancer, and as such they are well placed to deliver oral health messages to this high risk group.

Dyer et al.<sup>48</sup> (+) investigated the factors that might influence the provision of general health promotion through seven different health interventions by dental teams in general dental practice. For further details see page 47.

### **Summary and Evidence Statement**

There is moderate evidence that several barriers and facilitators affect the effectiveness of oral health promotion. These relate to the senders beliefs about the content and the receiver; the relationship between the sender and receiver, the senders satisfaction/enjoyment with oral health promotion, and the resources available.

#### **Evidence Statement 9**

Strong evidence from 11 studies; seven qualitative, two surveys, and two mixed method studies (1++, 9+, 1-) define barriers and facilitators to oral health promotion. Three qualitative studies reported in four papers<sup>34,35,39,48</sup> (1++, 2+) showed that dentists gave messages which accorded with their own experiences and prejudices, and there was moderate evidence that the sender's belief in the credibility and effectiveness of oral health messages affected the likelihood of them conveying them to the patient. The oral health professional's level of understanding of the 'receiver' was shown in four studies<sup>29,39,47,48</sup> (1++, 3+) to act as a barrier or facilitator to effectiveness, and two studies<sup>39,48</sup> (1++, 1+) showed that if the sender felt commitment to, and enjoyment/satisfaction when promoting oral health,

this would act as a facilitator. There was also moderate evidence from three qualitative studies<sup>42,44,45</sup> (3+), that any pejorative or judgemental views held by the sender, concerning the receiver of the message, would act as a barrier to oral health promotion. Three studies<sup>38,48,50</sup> (2+, 1-) indicated that lack of appropriate resources (knowledge, staff, time, space) act as barriers to the delivery of effective oral health promotion.

This evidence is likely to be directly applicable to the UK situation.

<sup>29</sup>Ashford. 1998 (+)

<sup>34,35</sup>Threlfall et al. 2007 (+)

<sup>36</sup>Witton et al. 2013 (+)

<sup>38</sup>Ashkenazi et al. 2014 (-)

<sup>39</sup>Jensen et al. 2014 (++)

<sup>42</sup>Grant et al. 2004 (+)

<sup>44</sup>Loignon et al. 2010 (+)

<sup>45</sup>Rajabiun et al. 2012 (+)

<sup>47</sup>Brocklehurst et al. 2013 (+)

<sup>48</sup>Dyer et al. 2006 (+)

<sup>50</sup>Williams et al. 2011 (+)

### 3.9 What factors affect patient satisfaction and motivation after a dental visit?

Although not strictly about 'oral health promotion', the scope of the review included a requirement to appraise the evidence relating to patient satisfaction and motivation. We suspect that our search strategy did not capture all the literature relating to this subject and since completing the review, two studies that are likely to be relevant have come to light. Because of the lack of research within dentistry on the relation between dentists' and patients' communicative behaviour, and their satisfaction with the consultation, the purpose of a study by Schouten et al.<sup>46</sup> (-) was to gain more insight into this topic. It was expected that patient satisfaction with consultations was determined strongly by the communication behaviour of the dentist. The total score on the scale assessing patients' satisfaction with a dental visit was 78.6 (SD 9.0: range 19-95). Patients' satisfaction with their own and the dentists' communicative behaviour was positively related to dentists' communicative behaviour ( $r=0.32: p=0.002$ ;  $r=0.34: p=0.001$  respectively). Scores on the communication score sheet showed that dentists' communicative behaviour towards dental patients is rather neutral. In view of the legal requirements with regard to the information provision to patients and the positive relationship between dentists' communicative behaviour and patients' satisfaction with emergency consultations, training dentists in communicative skills remains of vital importance.

Mills et al.<sup>51</sup> (++) also wished to develop an understanding of the key features of person centred care (PCC) in relation to general dental practice from a patient's perspective. The study used qualitative methods to explore the views of 15 purposively sampled patients living in Southwest England. In-depth semi-structured interviews were recorded, transcribed, coded and analysed thematically. PCC was viewed as key in the delivery of high quality care and therefore in patient satisfaction. Dimensions of PCC were identified and categorised as functional or relational in nature. Two dimensions of functional care were identified; healthcare system and physical environment. Five components of relational aspects of care were identified: connection, attitude, communication, empowerment and feeling valued. Mills proposed a model of patient centred care delivered from empirical evidence in the hope that it would inform and influence development of improved patient satisfaction.

Ostberg<sup>52</sup> (++) conducted a study investigating adolescents' perceptions and desires with respect to oral health education. A series of focus group sessions were conducted with adolescents, each group consisting of six individuals with a total of 34 participants. The main theme of the discussions was the participants' perceptions of oral health education including in dental settings. The discussions were transcribed verbatim and analysed according to the basic principles of Grounded Theory. One of the most important issues appeared to be that the dental personnel should consider the individual as a subject and not an object. The adolescents in the study were uncertain about their knowledge of oral health and expressed a wish to be taught more when they went to the dentist. Two core categories labelled "credibility" and "confidence", which interacted with each other, emerged from the data. The results indicated that the credibility of the staff delivering the message was essential, as was their ability to inspire confidence.

#### Summary and Evidence Statement

The evidence suggests that the oral health professionals' communication skills affect patient satisfaction and motivation.

### Evidence statement 10

Three papers (one quantitative<sup>46</sup> and two qualitative<sup>51,52</sup>) offered evidence regarding the factors affecting patient satisfaction and motivation relating to a dental consultation. One of these was carried out in Holland<sup>46</sup> (-) and showed that patients who make decisions about what is to happen to them are the most satisfied. The study also showed that patient satisfaction was correlated to the way in which the dental professional communicated ( $r=0.34$   $p< 0.001$ ). In another qualitative study<sup>51</sup> (++) it was shown that while the healthcare system and the physical environment influenced patient satisfaction, relational aspects of care, such as sense of connection, the dentist's attitude, communication, and the patient's sense of feeling valued and empowered, were important factors in the patient's satisfaction with the care they receive and their relationship with the oral health promoter. In addition a study in Sweden<sup>52</sup> (++) showed that the credibility of the people in the dental surgery was essential in oral health promotion, as was their ability to create confidence during a visit.

There is therefore strong evidence that positivity and communication affect patient satisfaction and motivation.

It is likely that this evidence is applicable to UK populations as one of the studies took place in the UK and the others in Holland and Sweden, which are culturally similar in terms of relationships between professional and patients.

<sup>46</sup>Schouten et al. 2003 (-)

<sup>51</sup> Mills et al 2014 (++)

<sup>52</sup> Ostberg 2005 (++)

### **3.10 Linking oral health messages to wider health outcomes**

One study was identified which examined the willingness of oral health practitioners and their teams to become involved in delivering wider health messages<sup>48</sup> (+) but no studies testing the effectiveness of combining oral health promotion messages with such wider issues were identified.

#### **Evidence Statement 11**

No studies published in English since 1994 were identified which specifically examined the effectiveness of combining oral health messages with general health promotion. One study<sup>48</sup> (+) investigated whether dental teams would be prepared to give patients general health advice, but no studies were identified which tested the effectiveness of combining such messages with oral health promotion. There is therefore no evidence on which to base conclusions or recommendations about doing so.

<sup>48</sup>Dyer et al. 2006 (+)

### 3.11 Discussion

This review focused on oral health promotion activities that can be delivered in the context of general dental practice, which aim to change individual's knowledge attitudes or behaviours in order to influence their oral health. It did not include legislative, regulatory, fiscal, or organisational activities which influence health/oral health. This approach was taken in order to ensure that the conclusions drawn could be applied by dental professionals in dental practices in the UK. This is a much narrower context than that of the review published in 1998 by Kay and Locker. The current review worked from the principle that the evidence base underpinning effective oral health promotion is well established and accepted (Delivering Better Oral Health) and therefore the strategy was to determine 'how' oral health promotion in the dental surgery should be carried out in order to optimise its effectiveness.

Confidence in the findings of this review stem from the methodology used. A broad search strategy ensured that all relevant literature was potentially included. Assessment of the quality, validity and applicability of the studies, and the data extraction process followed a strict and audited protocol. However, the ability of any review to offer clear and unequivocal conclusions is always limited by the quality and heterogeneity of the primary studies included in the review.

The quality of the studies that were relevant to the subject under review was very variable, and the outcome measures used to assess knowledge, behaviour and attitudes were ad hoc measures and therefore only very rarely allowed direct comparisons between studies, and entirely obviated the possibility of meta-analysing the data. Direct comparison between studies and/or meta-analysis would have only been possible for studies that measured the same clinical outcomes, and then only if the interventions had been the same. This required level of similarity between studies was not reached.

Despite the fact that the context is slightly different, the findings of the review to some extent echo the findings of earlier efforts to synthesise the evidence about oral health promotion (Kay and Locker, 1998). This review, like the previous one, demonstrates that there is a still lack of evidence to suggest that dietary change sufficient to affect oral health can be brought about via oral health promotion in the dental surgery. Similarly, there is still no evidence that caries that caries can be prevented by oral health promotion, although this apparent lack of effect may be due, in part, to the short follow-up (<3 years) in the majority of studies. The evidence that interventions involving the use of fluoride are effective remains strong, as in the former review. In addition, as in the previous review, the studies demonstrating reductions in plaque resultant upon oral health promotion were almost ubiquitously short term and therefore evidence that changes in oral hygiene behaviour are sustained in the long term is sparse. When oral hygiene is improved, gingival health is improved, and there is robust evidence to support this.

Overall, a key theme that emerged, particularly through thematic analysis of the qualitative research evidence, was the role of the sender of an oral health promoting message. The literature strongly suggests that the success of oral health promotion interventions delivered in dental practice by an oral health professional depends on that person's character, values, personality and people skills. And it is clear from this review that unless oral health practitioners believe in the effectiveness and efficacy of the advice they are giving and are convinced that it will truly make a difference to their patients' well-being, they are unlikely to practice oral health promotion activity successfully. Oral health practitioners therefore seem to need to develop a sense of self-efficacy about their oral health promotion efforts. That is, if

dental health teams were consistently achieving the desired objectives, they would be likely to become more proficient and effective at delivering oral health promotion.

The lower rates of success of oral health promotion among some groups may be explained by the fact that the greater the difference between the 'sender' of an oral health promotion message and the 'receiver', the less likely the oral health promotion is to be effective. Understanding and accepting the lives of patients and the context of oral health within those lives, along with avoidance of negative judgements of those with poor oral health and hygiene, helps to build the therapeutic alliance that is necessary for successful oral health promotion in the dental surgery. This relationship between patient and oral health professional, this therapeutic alliance, is a key factor in the success of oral health promotion in the dental surgery. Thus, greater emphasis on teaching oral health professionals about health psychology, and how people make choices, would make oral health promotion in the surgery more effective.

The validity of the findings of this review are supported by the guidance published by NICE in 2007 (PH6 Behaviour Change: the principles for effective interventions) and in 2014 (PH49 Behaviour Change: Individual Approaches) in that it is clear that the relationship and understanding between the promotion 'receiver' and the promotion 'sender' is crucial to success, as is the removal of barriers that prevent people from being committed to, and believing in, the effectiveness of oral health promotion. Most importantly this review supports the guidance given in PH49 that interventions should be based on proven behaviour change techniques. This premise clearly applies as much to oral health as to any other behaviour related disease as the current review shows that oral health promotion in the dental surgery setting has a greater probability of achieving positive outcomes if it is based on an accepted model of behaviour change and accepted psychological techniques.

The dental surgery setting offers an opportunity to offer smoking cessation advice, and the relationship of smoking to oral, as well as general disease suggests that smoking cessation advice can and should be given by dentists. There is evidence that giving such advice does increase the probability of smoking abstinence. However, just as for other oral health promotion messages, lack of resources (time, reimbursement), lack of training in how to appropriately offer advice, and concerns about how such advice will be viewed by patients, act as barriers to oral health practitioners involving themselves in this area of health promotion.

### **3.12 Conclusions**

- There is strong evidence that oral hygiene and gingival health can be improved by using psychological behaviour change models as the basis of the intervention.
- There is strong evidence that patients' knowledge levels can be improved by receiving oral health messages from an oral health practitioner.
- There is strong evidence that leaflets and written material are effective in promoting patients' knowledge, but no evidence that leaflets are effective for changing people's behaviour.
- There is strong evidence that a number of barriers and facilitators to the successful delivery of oral health promotion in the dental surgery exist.

- There is moderate evidence that patient motivation and satisfaction are dependent on the oral health professionals' communication skills and ability to build therapeutic alliances with their patients.
- There is moderate evidence that the nature (but not the professional role) of the 'sender' of oral health promotion messages and their attitudes and beliefs about oral health promotion can act as either a barrier or facilitator to effectiveness.
- There is weak evidence that improvements in knowledge lead to improved oral health behaviour, at least in the short term.
- There is no evidence available regarding the effectiveness of linking oral health promotion messages to wider health outcomes.

## 4. Evidence Tables

Evidence tables have been presented in alphabetical order.

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> Arora <b>Year:</b> 2000 <b>Citation:</b> Arora, R. (2000) Message framing and credibility: Application in dental services, <i>Health and Marketing Quarterly</i> , 18(2), 29-44. <b>Country of study:</b> USA <b>Aim of Study:</b> To test the influence of message framing and credibility on the attitude toward a dental exam and consumers' intention to use the dental office. <b>Study Design:</b> A 2 x 2 factorial design. A total of 4 different ads were designed	<b>Source Population(s):</b> Country of study (include if developed or non-developed) USA <b>Setting:</b> NR <b>Location (urban or rural):</b> Urban <b>Sample characteristics:</b> <b>Age:</b> 25-55 <b>Sex:</b> 40% male and 60% female <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> NR <b>Occupation:</b> NR <b>Education:</b> 33% high school graduates, 67% college graduates. <b>Socioeconomic</b>	<b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): NR  <b>Report how confounding factors were minimised:</b> N/A not a controlled study.  <b>Programme/Intervention description:</b> <b>What was delivered:</b> A total of four different adverts were designed to show various combinations of positive or negative framing of message, with low or high credibility. The adverts were designed to resemble professional appearance. Each advert had an introductory sentence (showing credibility e.g. national institute of dental research or no professional mentioned). For the framing element four benefits were used. In the positive framing condition 'detect any cavity, determine if	<b>Outcome name:</b> Attitude <b>Outcome definition:</b> The attitude towards the dental exam <b>Outcome measure:</b> 8 point semantic differential scale <b>Outcome measure validated:</b> NR  <b>Unit of measurement:</b> good (bad) idea, wise (foolish) decision, excellent (poor) choice.  <b>Time points measured:</b> At the end  <b>Outcome name:</b> Intention to attend the dental office themselves <b>Outcome definition:</b> Intention to attend the dental office <b>Outcome measure:</b> 8 point Likert scale <b>Outcome measure validated:</b> NR	<b>Behavioural results:</b> <b>Intervention group(s):</b> Attitude <b>Baseline:</b> NR <b>Follow up:</b> NR  End point: Low credibility, negative framing: Mean=5, Low credibility, positive framing: Mean=4.9  High Credibility, negative framing: mean=6.3 High Credibility, positive framing: Mean=5.6  The standardised reliability coefficient alpha was 0.92 indicating that the three statements are internally consistent.  The influence of	<b>Limitations identified by author:</b> NR  <b>Limitations identified by review team:</b>  No information on source population.  Methods of recruitment were not mentioned so there is no indication of whether eligible sample was represented or not.  Inter-rater reliability was not reported on for intention only attitudes.  Experimenters were not blind.  None of the oral health related outcomes were assessed although knowledge, attitude and behavioural

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<p>to show various combinations of positive or negative framing of message, with low or high credibility. Each ad had an introductory sentence followed by a list of benefits.</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity</b>(++, +, or -): +</p>	<p><b>position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): NR</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b></p>	<p>your gums are healthy and free of gingivitis, detect any build-up of plaque on your teeth and keep your original teeth for as long as you live' and for the negative framing condition 'will not be able to detect any cavity early'. (p35-36)</p> <p>2 booklets were given to the participants, one containing the advert (amongst other adverts) and one contained the questionnaire. They were instructed to look at it like they would a magazine. They were not informed of which advert was of interest. They were further instructed that once they had finished looking at the leaflet they should put it away and not refer to it again for the second part of the experiment. (p.36)</p> <p>The questionnaire included standard attitude and intention questions. The attitude towards the dental office was assessed using an 8 point semantic differentiation scale. The intention was measure by asking the participants to indicate the likelihood of recommending a dental exam to a friend. This was an 8 point</p>	<p><b>Unit of measurement:</b> Not likely to very likely.</p> <p><b>Time points measured:</b> At the end</p> <p><b>Outcome name:</b> Intention to recommend having a dental examination</p> <p><b>Outcome definition:</b> Intention to recommend to friends</p> <p><b>Outcome measure:</b> 8 point Likert scale</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Not likely to very likely.</p> <p><b>Time points measured:</b> At the end</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): An ANOVA was used to test for the main effects between the conditions</p>	<p>credibility and framing on attitude are significant (<math>p&lt;.001</math> and <math>p=.06</math> respectively). The interaction effect is not significant (<math>p=.15</math>).</p> <p><b>Intervention group(s):</b> Intention</p> <p>Baseline: NR</p> <p>Follow up: NR</p> <p>End point:</p> <p>Low credibility, negative framing: Mean=3.8</p> <p>Low credibility, positive framing: Mean=2.9</p> <p>High Credibility, negative framing: mean=5</p> <p>High Credibility, positive framing: Mean=4.3</p> <p>The main effects for personal intention to use the dental service were significant for credibility and framing (<math>p&lt;.001</math> and <math>p&lt;.01</math> respectively). The interaction is not</p>	<p>outcomes were.</p> <p>No information was given on effect sizes and no confidence intervals were given.</p> <p><b>Evidence gaps:</b> The results for interaction are mixed. It is not significant for personal attitude and personal intention, but it is significant when it comes to recommending dental examinations to friends. This needs further investigation.</p> <p><b>Source of funding:</b> NR</p>

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		<p>Likert scale. (p.36)</p> <p><b>Theoretical basis:</b> Prospect Theory, Kaleman and Tversky (1979). (p.30 para.5)</p> <p><b>By whom:</b> NR</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> The adverts were given in the booklets, there were 4 different booklets containing the different framing and credibility messages and then a second booklet containing the questionnaire.</p> <p><b>When/where:</b> NR</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> NR</p> <p><b>Control/Comparator description:</b> N/A</p> <p><b>What was delivered:</b></p> <p><b>By whom:</b></p> <p><b>To whom:</b></p> <p><b>How delivered:</b></p> <p><b>When/where:</b></p> <p><b>How often:</b></p> <p><b>How long for:</b></p> <p><b>Sample size at baseline:</b> N/A</p> <p><b>Total sample N =</b> 210</p> <p><b>Intervention group N =</b> 210</p> <p><b>Control Group N =</b> N/A</p> <p><b>Baseline comparisons</b> (report any baseline differences</p>	<p>and attitude and intention.</p>	<p>significant (p=.76). The main effects for intention to recommend the dental service to friends were also significant for credibility and framing (p&lt;.001 and p&lt;.02 respectively). The interaction is also significant (p=.01).</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p><b>NR</b></p> <p><b>Conclusion:</b> The findings indicate a strong effect of credibility on attitude as well as intention. The influence of framing is also significant on attitude and intention. The results for interaction are mixed. It is not significant for personal attitude and personal intention, but it is significant when it</p>	

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		<p>between groups in important confounders): <b>NR</b></p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>		<p>comes to recommending dental examinations to friends.</p> <p>The author then goes on to discuss the findings on this research in relation to other health areas such as BSE, surgery and credit card usage, for marketers considering using framing and credibility. That is, messages should be framed negatively indicating the loss by not using the services or loss by switching to other untried services, whilst 'prevention behaviour' should use positively framed behaviour. Considering the joint effects of framing and credibility trying to gain new customers should consider the use a positively framed strategy with a credible source and those who offer free services should consider using</p>	

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				negatively framed messages using credible sources.	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> Ashford, R, A.</p> <p><b>Year:</b> 1998</p> <p><b>Citation:</b> Ashford, R.A., An investigation of male attitudes toward marketing communications from dental service providers. British Dental Journal, 1998. 184(5): p. 235-8.</p> <p><b>Country of study:</b> UK</p> <p><b>Quality Score (++, +, or -):</b> +</p>	<p><b>Study design:</b> Focus groups (of 1 hour duration) comprising 6-7 members, conducted over a period of 18 months, discussing 5 open-ended questions.</p> <p><b>Research aims, objectives, and questions:</b> Objective: To identify the process by which males aged 25-34 who do not display regular attendance behaviour are exposed to, attend, comprehend and are persuaded by communications by general dental practitioners.</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> NR. Previous research is based on the DAGMAR model - linear sequential communications model (p.236, para.2) – but this was not tested in this research.</p> <p><b>State how data were collected:</b> <b>What method(s):</b> Focus groups taken from a stratified random sample of males (segmented by age 25-34). The groups comprised respondents who were non-attenders overall (this was determined before the focus groups were undertaken). A cut-off point of 2 years was used as</p>	<p><b>Population the sample was recruited from:</b> The respondents were mainly taken from part-time and full-time business and management students who were studying on an undergraduate or postgraduate programme (p.236, pa.9).</p> <p><b>How sample was recruited:</b> Prior to setting up the focus groups, the respondents were engaged in a general lecture style discussion on research methods and their limitations. The discussion then led to the general dental experience, where the researcher was able to identify the attenders and non-attenders. (p.236, pa.9)</p> <p><b>How many participants recruited:</b> n=116. Each focus group comprised 6-7 males. (p.236, pa.9)</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 25-34 years of age (p.236, pa.8)  <b>Sex:</b> males  <b>Sexual orientation:</b> NR</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>Each focus group was tape recorded and external administrative staff used for the transcription of the tapes. The analysis was undertaken by the author using the semantical analysis technique. (p.237, para.2)</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available] (p.237)</b></p> <p>Importance of effective communication:</p> <ul style="list-style-type: none"> <li>- Generally it was considered by all groups that not enough information (oral or written) was given by the dentist, either on preventive treatment or what they are actually doing as they complete the treatment or check.</li> <li>- Being informed about treatment and cost was particularly important to respondents. Only about 30% remembered discussing treatment and cost prior to their treatment. “I need to know what he (the dentist) is doing to me and what it’s going to cost”</li> </ul> <p>Attitudes to written communication:</p> <ul style="list-style-type: none"> <li>- Many identified that</li> </ul>	<p><b>Limitations identified by author:</b>  Sample frame: concentrated on respondents in the North of England, mainly undertaking some form of education. (p.238, pa.3)</p> <p><b>Limitations identified by review team:</b>  Role of researcher is not clearly described.  Only one method of data collection used.  Analysis undertaken by author only.</p> <p><b>Evidence gaps and/or recommendations for future research:</b>  Further research recommendations:  Service quality, dentists' attitudes to the adoption of a more customer friendly provision of services to NHS patients/customers in light of the current political instability affecting fund allocation. (p.238, pa.6)</p> <p><b>Source of funding:</b> NR</p>

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	<p>the criteria for a non-attender.</p> <p>The focus groups took place during lectures and were compulsory for the age group concerned – therefore resulting in no refusals. 5 basic open-ended questions or statements were posed at appropriate intervals and participants were invited to share their views and relate to their experiences.</p> <p>The statements/questions were as follows (although there was slight variations/adoptions of wording between groups):</p> <ul style="list-style-type: none"> <li>- comment on the importance of effective oral communication from the dentist</li> <li>- What are your attitudes to practice brochures?</li> <li>- What do you think about dental care promotional posters in the dentist's waiting room?</li> <li>- Have you ever read articles in magazines on dentistry, targeted specifically at males? (p.237)</li> </ul> <p><b>By whom:</b></p> <p><b>What setting:</b> The largest non-federal university in the UK (based in the North).</p> <p><b>When:</b> Over a course of 18 months from 1995-1996</p>	<p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b></p> <p><b>Religion:</b></p> <p><b>Place of residence:</b> From university in the North of the UK (p.236, para.9)</p> <p><b>Occupation:</b> Range: lecturers, part time students who are managers in a variety of industries, full-time students (Table 1, p.237)</p> <p><b>Education:</b> University level: range from undergraduate to PhD level (Table 1, p.237)</p> <p><b>Socioeconomic position:</b> Range: From low income; to middle income; to upper to middle income (Table 1, p.237)</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> Age 25-34. Male. A cut-off point of 2 years was used as the criteria for a non-attender (p.236, para.8)</p> <p><b>Exclusion criteria:</b></p>	<p>communications related to lack of attendance and the perceived threat of having to go private.</p> <p>“I've had many letters saying that if I don't go and see them soon, he'll knock me off the list – is this going to encourage me?”</p> <p>“The letters are bland, perhaps they need to be more friendly and interesting”</p> <p>Attitudes to practice brochures: Only 2 respondents out of the 18 groups had seen a practice brochure.</p> <p>Attitudes to dental care promotional posters in the dentist's waiting room:</p> <ul style="list-style-type: none"> <li>- General perception that posters were aimed at children.</li> <li>- Not generally perceived as credible.</li> </ul> <p>Articles in magazines on dentistry:</p> <ul style="list-style-type: none"> <li>- General response was negative as most had not read an article specifically aimed at males.</li> </ul> <p>“Even if it was there I'd skip it – not interested”</p> <p><b>Conclusions:</b> (p.238)</p> <p>It was felt that dentists should take time to talk to the patients specifically to explain what treatment is being administered, preventive dental care and the costs.</p> <p>Use of written information was</p>	

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			<p>perceived as functional and impersonal.</p> <p>Most of the sample group had not seen a dental brochure and dental posters were perceived as not always credible. There was little experience in reading articles.</p> <p>In light of the findings there are some key points which are important for marketing communications for dental services:</p> <p>The traditional response hierarchy model needs to be adapted – the dentist must consider the time period during and after the patient has purchased the service and target the communications specifically for these periods.</p> <p>The dentist must consider the opportunities with the reluctant patient when they arrive for an appointment. These opportunities are: to build a personal relationship by providing educational informative and caring information, use written communications more fully in customer-orientated manner, use the surgery and staff within the surgery more fully.</p>	

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<p><b>Author:</b> Malka Ashkenazi, Ortal Kessler-Baruch &amp; Liran Levin</p> <p><b>Year:</b> 2014</p> <p><b>Citation:</b> Ashkenazi, M., O. Kessler-Baruch, and L. Levin, Oral hygiene instructions provided by dental hygienists: results from a self-report cohort study and a suggested protocol for oral hygiene education. <i>Quintessence International</i>, 2014. 45(3): p. 265-9.</p> <p><b>Country of study:</b> Israel (p.266 para.4)</p> <p><b>Aim of Study:</b> This study was undertaken to evaluate respectively the preventive</p>	<p><b>Source Population(s):</b> Israeli Dental Hygienists</p> <p><b>Setting:</b> National meeting of the Israel Society of Dental Hygienists (p.266 para.4)</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Mean=39.05 (SD=18.18) (p.266 para.11)</p> <p><b>Sex:</b> All females (p.266 para.11)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Israel</p> <p><b>Occupation:</b> Dental hygienists: private practice only= 49.7%; public practice only= 21.7%; both public &amp; private= 28.57% (p.267 para.2)</p>	<p><b>Method of allocation (Describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> N/A – this was not a controlled study.</p> <p><b>Report how confounding factors were minimised:</b> [quality assessment]</p> <p><b>Method description:</b></p> <p><b>What was delivered:</b> A structured questionnaire was designed by the authors to assess demographic characteristics of the dental hygienists as well as the extent to which they targeted their efforts toward their patients' guidance and education. Questionnaires were used to collect information on the preventive care activities of dental hygienists, and recorded information regarding age, seniority and their habits in instructing their patients about oral hygiene measures. (p. 266 paras 5-6)</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N =</b> 179 returned questionnaires</p> <p><b>Baseline comparisons</b> (report any</p>	<p><b>There are no outcomes as this is not an intervention</b></p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): Differences in prevalence of different instruction methods provided by dental hygienists were determined using chi-squared. Analyses were performed using SPSS. (p.266 para.7)</p> <p>Correlation between means of instruction and age or type of dental clinic was determined using the Pearson</p>	<p><b>Oral hygiene instruction:</b></p> <p>127 (70.9%) reported that they provide oral hygiene instruction to all their patients; 51 (28.5%) to most of their patients and 1 (0.6%) reported that she never does. (p.267 para.3)</p> <p>Regarding frequency of oral hygiene instruction:</p> <p>Every meeting: 97 (54.5%)</p> <p>Every periodic treatment: 73 (41%)</p> <p>Only in the first meeting: 8 (4.5%)</p> <p>Never: 1 (0.6%) (p.267 para.3)</p> <p>Reasons for not instructing patients included:</p> <ul style="list-style-type: none"> <li>• Lack of time (21.7%)</li> <li>• No need since the patient knows</li> </ul>	<p><b>Limitations identified by author:</b></p> <p>One limitation of this present study is its self-reported nature. This might be subject to bias and to inaccuracies of self-evaluation. Another limitation is the selection bias of those who attended the annual meeting and completed the questionnaire. (p.269 para 5)</p> <p><b>Limitations identified by review team:</b></p> <p>The study took place in Israel (a developed country) but the characteristics of Israeli dental provision were not provided.</p> <p>This is unlikely to be the case due to the nature of the sample. This was a convenience sample drawn entirely from attendees at the</p>

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<p>instruction provided by dental hygienists and to investigate the extent to which they targeted their efforts toward patients' guidance and education. (p.266 para.3)</p> <p><b>Study Design:</b> Cross-sectional survey of dental hygienists carried out during the 2012 national meeting of the Israel Society of Dental Hygienists. (p.266 para.4)</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> -</p>	<p><b>Education:</b> NR  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> All dental hygienists who arrived at the convention were asked to complete an anonymous structured questionnaire.</p> <p><b>Inclusion Criteria:</b> The study included all dental hygienists who attended the annual meeting and completed the questionnaire.</p> <p><b>Exclusion Criteria:</b> NR</p>	<p>baseline differences between groups in important confounders): <b>N/A. – no control group</b></p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>	<p>correlation test. (p.266 para.8)</p>	<p>how to brush (61.5%)</p> <ul style="list-style-type: none"> <li>• Patient is uninterested in receiving instructions (23.6%)</li> <li>• Instruction does not improve the oral hygiene of patients (0.6%) (p.267 para.3)</li> </ul> <p>% which encouraged their patients to use specific hygiene aids</p> <ul style="list-style-type: none"> <li>• Toothbrush - 97.2%</li> <li>• Flossing – 57%</li> <li>• Wooden tooth pick – 34.1%</li> <li>• 85.5% - plastic or rubber toothpick</li> <li>• 67.6% - interproximal brush</li> <li>• 45.8% - mouth rinsing</li> <li>• 32.4% - water pick (p.267 para.4)</li> </ul> <p>An average of 4.32 (SD: 2.09 minutes)</p>	<p>national meeting of the Israeli Society of Dental Hygienists. Thus the study excluded Dental Hygienists who were not members and any members who couldn't make it/ decided not to go to the meeting. There is no indication of whether or not these groups would have differed in any way from the attendees but there is a strong possibility that they did.</p> <p>At 60% the response rate was good but the reasons for refusal are not provided even though this may have caused selection bias. There is information on whether or not refusals significantly differed in characteristics like location of practice, gender or age. The fact that all the participants were female may reflect the</p>

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	<p><b>% of selected individuals agreed to participate:</b> 60% of 300 dental hygienists asked (n=179) (p.266 para.9)</p> <p><b>Potential sources of bias:</b></p>			<p>instructing and educating their patients. (p. 267 para.5)</p> <p>About one fifth of the participants (22.2%) reported instructing patients at high risk of caries and/or periodontal disease while 77.7% reported giving the same instructions. (p.267 para.7)</p> <p>No correlation was found between the reported duration for providing oral hygiene instruction and type of instruction. Similarly no correlation was found between means of instruction and age, seniority, place of graduation, and type of dental clinic. (p.268 para.1)</p> <p>Further details about the distribution of dental hygienists' reports regarding the means used for oral</p>	<p>demographics of this occupation in Israel but in the absence of any data on this, it raises the possibility that it could be a result of selection bias.</p> <p>As noted by the author selection bias was possible due to the use of a convenience sample.</p> <p>The paper implies (but doesn't make explicit) that the questionnaires were given out at the conference and 'returned' to the researchers (as opposed to the researchers running through the questionnaire with each respondent in turn) (p.266 para.9). Assuming this is the case a contamination effect might occur if some of the respondents discuss the questionnaire with each other before returning them. This is</p>

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				<p>hygiene instruction are included in Table 1 of the paper.</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs. control) N/A. – this is not a longitudinal study.</p> <p><b>Conclusion:</b> According to the present report it seems that dental hygienists in the tested group do not make enough effort to educate and instruct their patients regarding oral hygiene preventive measures. On average dental hygienists in studied cohort spent approximately 4 minutes discussing oral hygiene. Dental hygienists were also</p>	<p>not mentioned in the paper.</p> <p>Because the study relies on self-reported data validity is likely to be poor as dental hygienists may not report what they actually do but what they feel they should do.</p> <p>No test of reliability was reported. The measures were self-reported.</p> <p>Outcomes were not set out before the results so it is impossible to say whether any outcomes were not reported.</p> <p>While Chi Squared and Pearson's Correlation Coefficient were used the results are not presented in the report.</p> <p><b>Evidence gaps: NR</b></p>

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				not employing effective strategies in the selection of patients most in need of intensive instructional efforts, and did not use sufficient demonstration methods in order to improve their patients' performance. (p.269 para.30)	<b>Source of funding:</b> NR

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<p><b>Author:</b> Blinkhorn, A. S. et al</p> <p><b>Year:</b> 2003</p> <p><b>Citation:</b> Blinkhorn, A.S., et al., A cluster randomised, controlled trial of the value of dental health educators in general dental practice. British Dental Journal, 2003. 195(7): p. 395-400</p> <p><b>Country of study:</b> England, UK</p> <p><b>Aim of Study:</b> The aim of the study was to evaluate the effectiveness and costs of trusts seconding salaried dental health educators to selected, co-operating general dental practices to control dental caries in regularly attending, young children at risk. This</p>	<p><b>Source Population(s):</b> Children aged 1-6 in general dental practices in the West Pennine District of North-West England. The district is made up mainly of the 2 boroughs of Tameside and Oldham, both relatively economically disadvantaged with a considerable racial mix. The prevalence of caries in the district is amongst the highest in the country, with a mean dmft among 5-year-olds of 2.4.</p> <p><b>Setting:</b> General dental practices in the West Pennine District of North-West England.</p> <p><b>Location (urban or rural):</b> West Pennine District of North-West England</p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> The participating practices were randomly allocated to groups by the study statistician stratified by age and caries levels of the children involved, using computer generated random numbers.</p> <p><b>Report how confounding factors were minimised:</b> [quality assessment] Stratification by age and caries levels</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> Prior to randomisation: patients and parents initially seen by a dental hygienist, parents dental health knowledge assessed through questionnaire, study organiser observed mothers brushing their children's teeth.</p> <p>Dental health counselling in toothbrushing given to the parents, including the use of appropriate fluoride toothpaste,</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Caries levels</p> <p><b>Outcome definition:</b> Mean dmft in deciduous molars and canines. Analyses were conducted at the level of both teeth and surfaces, including and excluding early, decalcified lesions.</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> dmft</p> <p><b>Time points measured:</b> Beginning and end of study (only end results reported)</p> <p><b>Outcome name:</b> Plaque scores</p> <p><b>Outcome definition:</b> The presence of plaque - whether plaque is</p>	<p><b>Oral health (clinical) results:</b></p> <p><i>Caries levels (dmft) at final examination (after 2 years)</i> Mean (SD):</p> <p><b>Total sample:</b> <b>Baseline:</b> NR <b>End point:</b> NR</p> <p><b>Intervention group(s):</b> <b>Baseline:</b> NR <b>End point:</b> 2.65 (2.56)</p> <p><b>Control group(s):</b> <b>Baseline:</b> NR <b>End point:</b> 3.22 (2.85)</p> <p>Coeff (SE) 0.55 (0.44) (Intraclass correlation coefficient = 0.101, design effect Deff = 1.8) P value 0.21</p> <p><b>Attrition details:</b> <b>Intervention group:</b> 35 children (20%) didn't complete the follow-up</p>	<p><b>Limitations identified by author:</b></p> <p>Each participating dentist was asked to provide 10-15 patients in this category. In the event many of the dentists had difficulties in providing sufficient patients that met these criteria and two practices had to withdraw from the study because of this problem. Several of the children recruited were free of caries at the beginning of the study and a considerable proportion of these were free from disease at the final examination. This suggests two things. Firstly, even in a high caries, low socio-economic area such as this in the North West of England, most children who go to the dentist regularly are not at high risk. It is also possible that dentists are not so</p>

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<p>included, in addition to reducing the prevalence of caries in children, the ability of such a programme to improve the dental health knowledge, attitudes and toothbrushing skills of the parents of these children.</p> <p><b>Study Design:</b> 2 cell, parallel group, cluster randomised, controlled clinical trial.</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity</b>(++, +, or -): +</p>	<p><b>Sample characteristics:</b>  <b>Age:</b> 1-6 years of age.  <b>Mean age:</b>  Control group = 4.2  Intervention group = 4.1  <b>Sex:</b> NR  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR but area has a considerable racial mix  <b>Religion:</b> NR  <b>Place of residence:</b> West Pennine District of North-West England  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic position:</b> The district is made up mainly of the 2 boroughs of Tameside and Oldham, both relatively economically disadvantaged.  <b>Social capital:</b> NR  <b>Eligible population</b></p>	<p>and sugar control over the course of 2 visits. Included hands-on demonstrations of how to clean a small child's teeth together with a free issue of toothpaste and a small toothbrush, the analysis of 24 hour diet records and supporting commercial dental health education leaflets. Parents and children were recalled every 4 months over 2 years to reinforce the counselling and to issue more toothpaste and toothbrushes when appropriate.</p> <p>The same questionnaire was administered at the end of the 2-year period and toothbrushing skills were monitored, and an examination carried out (as at baseline).</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Study organiser – a hygienist/therapist with an MSc in Dental Practice undertook counselling and administered questionnaire</p> <p>An independent experienced dental epidemiologist examined all the children at the end of the study</p> <p><b>To whom:</b> Patients (children) and parents</p> <p><b>How delivered:</b> Counselling,</p>	<p>present at the final examination (yes or no)</p> <p><b>Outcome measure:</b>  Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number and percentage of children</p> <p><b>Time points measured:</b> End of study (after 2 years)</p> <p><b>Outcome name:</b>  Dental health knowledge and attitudes of parents</p> <p><b>Outcome definition:</b> Number of times toothbrushing per day, amount of toothpaste used, how to brush child's teeth, snacking habits</p> <p><b>Outcome measure:</b>  Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number and percentage of children</p> <p><b>Time points measured:</b> Start (baseline) and end (after 2 years) of study</p>	<p><b>Control group:</b> 28 children (17%) didn't complete the follow-up</p> <p><b>Plaque scores:</b> whether there is plaque present at final examination</p> <p><b>Plaque free % (n):</b></p> <p><b>Total sample:</b>  <b>Baseline:</b> NR  <b>End point:</b> NR</p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> NR  <b>End point:</b> 47% (65)</p> <p><b>Control group(s):</b>  <b>Baseline:</b> NR  <b>End point:</b> 39% (52)</p> <p>Although this difference of 8% was in favour of the intervention group children it was not large enough to be statistically significant (GEE coefficient -0.35 (SE = 0.25), <math>P = 0.16</math>).</p> <p><b>Attrition details:</b>  <b>Intervention group:</b> 35 children (20%)</p>	<p>skilled at selecting from their regular attenders those who will get further caries over the next 2 years. If either or both of these concepts are true, then any substantive scheme based on this model would suffer by including a proportion of children who were not at 'high risk'. Because of this it would seem inefficient to spend the time of a skilled dental health educator counselling selected parents.</p> <p>A further problem encountered at the beginning of the study was to persuade the mothers to attend the practices for separate appointments for dental health counselling. The logistics of the study made it practically impossible for the dental health educator to be present at the practice when the</p>

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	<p><b>(describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> The sample size calculation was based on detecting a reduction in the proportion of children with a caries increment <math>&gt;1</math> from 0.50 to 0.25. A sample size of an average of 10 children in 15 clusters per study group had greater than 90% power to detect this reduction assuming an intra-class correlation coefficient of 0.05. In the event, 33 practices were chosen; however, three had to withdraw, 2 because they were unable to provide at least 10 patients who fitted the criteria and one because the practice was planning a refit.</p> <p>Practices volunteered</p>	<p>demonstrations, leaflets</p> <p><b>When/where:</b> Dental practices in West Pennine District of North-West England</p> <p><b>How often:</b> Every 4 months</p> <p><b>How long for:</b> 2 years</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> The control group parents and children were seen only once at the beginning of the study, when they were given toothbrushing instruction and a tube of fluoride toothpaste.</p> <p>The same questionnaire was administered at the end of the 2-year period and toothbrushing skills were monitored, and an examination carried out (as at baseline).</p> <p><b>By whom:</b> Study organiser – a hygienist/therapist with an MSc in Dental Practice administered questionnaires.</p> <p>An independent experienced dental epidemiologist examined all the children at the end of the study</p> <p><b>To whom:</b> Patients (children) and parents</p> <p><b>How delivered:</b> Toothbrushing instruction</p> <p><b>When/where:</b> Dental practices</p>	<p><b>Outcome name:</b> Toothbrushing skills</p> <p><b>Outcome definition:</b> Whether children brushed their own teeth or whether parents brushed their children's teeth and how.</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number and percentage of children</p> <p><b>Time points measured:</b> Start (baseline) and end (after 2 years) of study</p> <p><b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b> The children were clustered within the unit of randomisation, the general dental practices. The cross-sectional caries data in</p>	<p>didn't complete the follow-up</p> <p><b>Control group:</b> 28 children (17%) didn't complete the follow-up</p> <p><b>Behavioural results:</b></p> <p><i>Dental health knowledge and attitudes of parents: results after 2 years</i></p> <p><b>Correct answers to questionnaire: % (n/out of n)</b></p> <p><b>How often should a child's teeth be brushed:</b></p> <p><b>Intervention:</b></p> <p><b>End point:</b> 80% (n=106/132)</p> <p><b>Control:</b></p> <p><b>End point:</b> 78% (n=90/116)</p> <p><b>What type of brush is best for a young child:</b></p> <p><b>Intervention:</b></p> <p><b>End point:</b> 98% (130/132)</p> <p><b>Control:</b></p> <p><b>End point:</b> 98% (114/116)</p> <p><b>How much toothpaste should be placed on</b></p>	<p>appropriate children attended for their regular inspections, so separate appointments on a specific session were required. This led to many broken appointments, particularly at the beginning, rendering the cost per visit expensive.</p> <p>No attempt was made to define what happened on an everyday basis in the home environment. There is little doubt that giving information on diet and teaching toothbrushing skills to the mothers in the test group rendered them more knowledgeable and skilful, but whether this translated into everyday routines at home is open to question.</p> <p>2 years may be too short to expect to reap the benefits of this concentrated educational</p>

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	<p>to take part and were asked to provide between 10–15 patients, 1–6 years of age.</p> <p>At the beginning of the study, 30 practices provided 269 parents who contributed 334 children.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> Unclear – practices volunteered to take part</p> <p><b>Inclusion Criteria:</b> In order to be included, each practice had to accept the nature of the study, had to have premises which would allow the study to take place in a suitable environment, had to have a well organised recall system and no stated dental health</p>	<p>in West Pennine District of North-West England</p> <p><b>How often:</b> Once at the beginning of the study (exam and questionnaire also at the end)</p> <p><b>How long for:</b> 2 years</p> <p><b>Sample size at baseline:</b></p> <p><b>Cluster:</b>  <b>Total sample N</b> = 30 practices  <b>Intervention group N</b> = 15 practices  <b>Control Group N</b> = 15 practices</p> <p><b>Individuals:</b>  <b>Total sample N</b> = 269 parents, 334 children  <b>Intervention group N</b> = 138 parents, 172 children  <b>Control Group N</b> = 131 parents, 162 children</p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b> No significant imbalances between the 2 groups (gender not specified)</p> <p><b>Study sufficiently powered (power calculations and provide details):</b> The sample size calculation was based on detecting a reduction</p>	<p>both groups were compared using generalised estimating equations (GEE) with identity link and exchangeable correlation coefficients to control for the effects of clustering. This was carried out separately for both the baseline data collected by the study organiser and the final examinations recorded by the independent dental epidemiologist. The baseline data were used solely to allocate practices to groups. As the study organiser was aware of the group allocation during the course of the study it was not appropriate to base the results on the calculation of increments as this may have resulted in bias.</p> <p>Differences between the parents' knowledge of and attitudes towards dental health and their toothbrushing skills in the test and</p>	<p><i>the brush:</i>  <b>Intervention:</b>  <b>End point:</b> 70% (92/132)  <b>Control:</b>  <b>End point:</b> 53% (62/116)</p> <p><i>How much fluoride should the paste contain:</i>  <b>Intervention:</b>  <b>End point:</b> 80% (105/132)  <b>Control:</b>  <b>End point:</b> 6% (7/114)</p> <p><i>How should you brush your child's teeth:</i>  <b>Intervention:</b>  <b>End point:</b> 64% (85/132)  <b>Control:</b>  <b>End point:</b> 32% (37/116)</p> <p><i>When is it best to give sugary foods and drinks to young children:</i>  <b>Intervention:</b>  <b>End point:</b> 91% (119/131)  <b>Control:</b>  <b>End point:</b> 66%</p>	<p>programme.</p> <p><b>Limitations identified by review team:</b>  Population may not be representative of the source population as practices volunteered to participate.</p> <p>Randomisation by practice (cluster) but results/analysis by individuals.</p> <p>For toothbrushing skills the drop out rate in the control group was high (46%).</p> <p><b>Evidence gaps:</b>  NR</p> <p><b>Source of funding:</b>  The National Primary Dental Care Research and Development Programme funded the investigation.</p>

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	<p>policy.</p> <p>The children were required to have good general health, to attend (the dentist) on a regular basis, to have some caries experience, and in the opinion of their dentist, to be at risk to caries over the next 2 years. Some families had more than one child who fitted the criteria, and so there were more children than parents involved.</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> 3 out of 33 practices withdrew (9%)</p> <p><b>Potential sources of bias:</b> None reported – examiners were unaware of group allocation to eliminate bias</p>	<p>in the proportion of children with a caries increment &gt;1 from 0.50 to 0.25. A sample size of an average of 10 children in 15 clusters per study group had greater than 90% power to detect this reduction assuming an intra-class correlation coefficient of 0.05. In the event, 33 practices were chosen; however, 3 had to withdraw, 2 because they were unable to provide at least 10 patients who fitted the criteria and one because the practice was planning a refit.</p>	<p>control groups were compared at the beginning and end of the study using the same GEE approach with logit link function.</p>	<p>(77/116)</p> <p><i>Which four of the following foods cause most decay in children:</i></p> <p><b>Intervention:</b> <b>End point:</b> 32% (42/132)</p> <p><b>Control:</b> <b>End point:</b> 6% (7/116)</p> <p><i>How important is decay in milk teeth:</i></p> <p><b>Intervention:</b> <b>End point:</b> 79% (104/132)</p> <p><b>Control:</b> <b>End point:</b> 72% (83/116)</p> <p><i>If your child had decay in a baby tooth what treatment would you want:</i></p> <p><b>Intervention:</b> <b>End point:</b> 57% (75/132)</p> <p><b>Control:</b> <b>End point:</b> 49% (57/116)</p> <p><b>Attrition details:</b> <b>Intervention group:</b> 6 parents didn't</p>	

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				<p>complete the follow-up (4%)</p> <p><b>Control group:</b> 15 parents didn't complete the follow-up (11%)</p> <p><i>Toothbrushing skills: after 2 years % (n):</i></p> <p><i>Position of parent in relation to child (behind/any other):</i></p> <p><b>Intervention:</b> <b>End point:</b> 75% (88/117)</p> <p><b>Control:</b> <b>End point:</b> 14% (10/71)</p> <p><i>Parent's method of holding toothbrush (finger grip/any other):</i></p> <p><b>Intervention:</b> <b>End point:</b> 97% (113/117)</p> <p><b>Control:</b> <b>End point:</b> 21% (15/71)</p> <p><i>Amount of toothpaste placed on brush (small pea/any other):</i></p> <p><b>Intervention:</b> <b>End point:</b> 99% (116/117)</p>	

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				<p><b>Control:</b>  <b>End point:</b> 18%  (13/71)</p> <p><i>Whether the front and back teeth were brushed (yes/no):</i></p> <p><b>Intervention:</b>  <b>End point:</b> 95%  (111/117)</p> <p><b>Control:</b>  <b>End point:</b> 21%  (15/71)</p> <p><i>Mean length of time teeth were brushed (in seconds):</i></p> <p><b>Intervention:</b>  <b>End point:</b> Mean = 30</p> <p><b>Control:</b>  <b>End point:</b> Mean = 25</p> <p><b>Attrition details:</b>  <b>Intervention Group:</b>  21 parents didn't complete the follow-up (15%)</p> <p><b>Control Group:</b> 60 parents didn't complete the follow-up (46%)</p> <p><b>Cost:</b> Each 2-hour session to counsel ten parents cost £39.37 (including travel and</p>	

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				<p>materials).</p> <p><b>Conclusion:</b> The model tested of seconding a qualified dental health educator to general dental practices to counsel mothers of regularly attending, at-risk, young children failed to reveal a substantial improvement in dental health over a 2-year period. However, there were clear benefits in relation to dental health knowledge, attitudes and toothbrushing skills among these mothers.</p> <p>On the basis of this result, Primary Care Trusts should carefully consider value for money before adopting such a strategy to improve the dental health of young children within their localities.</p>	

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<p><b>Author:</b> George Boundouki, Gerry Humphris, Anne Field</p> <p><b>Year:</b> 2004</p> <p><b>Citation:</b> Boundouki, G., G. Humphris, and A. Field, Knowledge of oral cancer, distress and screening intentions: longer term effects of a patient information leaflet. <i>Patient Education and Counselling</i>, 2004. 53(1): p. 71-7.</p> <p><b>Country of study:</b> UK</p> <p><b>Aim of Study:</b> Study aim was to determine the influence of a patient information leaflet (PIL) on mouth cancer to improve knowledge, reduce distress and increase intention to accept a mouth</p>	<p><b>Source Population(s):</b> UK but no additional information other than that reported in setting.</p> <p><b>Setting:</b> 2 dental surgeries were chosen. The first was drawn from an inner city area and the second from a suburban area (p.72 para.3).</p> <p><b>Location (urban or rural):</b> Both clinics were urban.</p> <p><b>Sample characteristics:</b></p> <p><b>Age (mean):</b> 47.4</p> <p><b>Sex (no. of females):</b> 187 (59%)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education (mean year left school):</b></p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): Sessions were designated randomly into leaflet (experimental) and non-leaflet (control) groups (p.72 para 3).</p> <p><b>Report how confounding factors were minimised:</b> [quality assessment] Allocation by session was adopted specifically to prevent contamination whereby control patients unwittingly receive access to the leaflets by accident (p.72 para 3).</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> Patients who agreed to participate were given the questionnaire to complete while waiting for their dental appointment. In the experimental group patients were provided with the mouth cancer leaflet and instructed to read it. They were asked to return the PIL to the researcher prior to completion of the questionnaire to prevent referring to it while answering</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name: 1)</b> Knowledge of mouth cancer (p.72 para 4)</p> <p><b>Outcome definition: N/A.</b></p> <p><b>Outcome measure:</b> Consists of 36 dichotomous questions with respondents gave true/false replies. Correct scores were then summed (p.72 para 4)</p> <p><b>Outcome measure validated:</b> Yes – the scale has criterion validity (p.72 para 4)</p> <p><b>Unit of measurement:</b> Score on a 0-36 unit knowledge scale (p.72 para 4)</p> <p><b>Time points measured:</b> Baseline and 8 weeks follow-up</p> <p><b>Outcome name: 2)</b></p>	<p><b>Behavioural results:</b></p> <p><b>1)</b> Knowledge of mouth cancer</p> <p>Mean scores with standard deviations in brackets and Mann-Whitney U results below (all results from p.74 Table 2).</p> <p>Intervention group(s): Baseline: 31.05 (3.53) 8 weeks: 30.26 (2.86)</p> <p>Control group(s): Baseline: 28.08 (3.25) 8 weeks: 29.04 (2.57)</p> <p>Baseline - leaflet v non-leaflet: MWU z: -7.70 P value: 0.001</p> <p>8 weeks - leaflet v non-leaflet: MWU z:-4.04 P value: 0.001</p> <p><b>2)</b> Mouth screen distress scale</p> <p>Mean scores with</p>	<p><b>Limitations identified by author:</b> Conclusions from these studies were limited because they assessed effects soon after the time patients were first exposed to the written information. (p.72 para 2)</p> <p>While the paper showed a lack of diminution of the effect of the leaflet over the 8 week period the patients were expecting a follow up contact in the form of a further questionnaire. (p.75 para 4)</p> <p>The findings are restricted to the 2 dental practices sampled. A deliberate attempt had been made to select practices from different surroundings (suburban and inner-city). In addition, forty percent of participants were lost at follow-up. The participants who</p>

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<p>screen over a 2-month period (abstract).</p> <p><b>Study Design:</b> Parallel RCT (p.72 para.3 and p.73 Fig 1)</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>17.8</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): the researcher approached patients in the waiting areas of the dental surgeries and explained the study and asked for consent to participate (p.73 para.2).</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR – although decision to conduct the research in 2 surgeries in areas with different socio-economic characteristics will help.</p>	<p>questions. (p.73 para.2)</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The researcher (one of the authors) (p.73 para.2)</p> <p><b>To whom:</b> Consenting patients</p> <p><b>How delivered:</b> Leaflet. The design quality of the leaflet was assessed adopting the new medical information design assessment scale (MIDAS). The leaflet obtained a total score of 11 from a possible maximum of 13. (p.72 para.3)</p> <p><b>When/where:</b> In the waiting area of the dental clinic (p.73 para.2)</p> <p><b>How often:</b> Just once</p> <p><b>How long for:</b> During one day only</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Patients were given a questionnaire to complete.</p> <p><b>By whom:</b> The researcher (one of the authors) (p.73 para.2)</p> <p><b>To whom:</b> Consenting patients</p> <p><b>How delivered:</b> N/A</p> <p><b>When/where:</b> In the waiting area of the dental clinic (p.73 para.2)</p> <p><b>How often:</b> Just once</p> <p><b>How long for:</b> During one day only</p>	<p>Mouth screen distress scale (p.72 para.5)</p> <p><b>Outcome definition:</b> N/A.</p> <p><b>Outcome measure:</b> Three items using the common stem: "How do you feel about having a check for mouth cancer?" Each item had a five point rating scale based on perceived levels of anxiety, worry or concern. The scales were then summed on a scale ranging from low to high distress (p.72 para.5).</p> <p><b>Outcome measure validated:</b> Yes – the Cronbach alpha from a separate sample of university students was 0.91 (p.72 para.5).</p> <p><b>Unit of measurement:</b> Score on a scale ranging from 3 to 15.</p> <p><b>Time points measured:</b> Baseline and 8 weeks follow-up</p> <p><b>Outcome name:</b> 3) Intention to accept a mouth cancer screen</p>	<p>standard deviations in brackets and Mann-Whitney U results below (all results from p.74 Table 2).</p> <p>Intervention group(s): Baseline:4.48 (2.20) 8 weeks:4.46 (2.10)</p> <p>Control group(s) Baseline:4.92 (2.22) 8 weeks:4.94 (2.47)</p> <p>Baseline - leaflet v non-leaflet: MWU z:-2.57 P value: 0.01</p> <p>8 weeks - leaflet v non-leaflet: MWU z:-1.97 P value: -0.049</p> <p>3) Intention to accept a mouth cancer screen</p> <p>Mean scores with standard deviations in brackets and Mann-Whitney U results below (all results from p.74 Table 2).</p> <p>Intervention group(s):</p>	<p>responded at 2 months were not fully representative of the initial baseline sample with fewer non-regular dental attendees and smokers, hence caution is required when generalising the results (p.76 para.2).</p> <p><b>Limitations identified by review team:</b></p> <p>The source population isn't really specified. Although the research is plainly in the UK there is no information on where exactly. Furthermore while the Authors selected 2 dental clinics - one in a suburban and one in an inner city area which should improve representation by socio-economic group. Research in a rural area does not seem to have been considered.</p> <p>16% (82) patients who were invited refused to participate and the refusals did differ</p>

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	<p><b>Inclusion Criteria:</b> there does not appear to be any inclusion criteria.</p> <p><b>Exclusion Criteria:</b> there does not appear to be any exclusion criteria.</p> <p><b>% of selected individuals agreed to participate:</b> 84% of the 526 patients invited to participate consented to take part. 82 patients who were invited refused to participate. The refusal group did not differ significantly from the participants by gender but did differ significantly by age (older patients were more likely to refuse) (p.73 para.5).</p> <p><b>Potential sources of bias:</b></p>	<p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 418</b> (444 consented but 26 did not return sufficiently complete data for analysis)</p> <p><b>Intervention group N = 217</b></p> <p><b>Control Group N = 201</b> (p.73 Fig 1 and para.7)</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): No comparison on statistical testing showed significant non-equivalence (<math>p&lt;0.1</math>) between the intervention and control groups.</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): A power analysis showed that a sample size of 143 in each group would have 80% power to detect difference in means of a single question assuming a common standard deviation of three using a 0.05 significance level.</p> <p>Approximately 500 patients were planned to enter the study allowing for a 40% attrition rate (p.73 para.3).</p>	<p>(p.72 para.6)</p> <p><b>Outcome definition:</b> N/A.</p> <p><b>Outcome measure:</b> Assessed with 2 questions: 'how likely would you agree to have an oral health screen to check your mouth for cancer' and 'how likely would you refuse to have a check for oral cancer'. A 7 point rating scale was employed for both items and coded 1 'extremely unlikely' to 7 'extremely likely' (p.72 para.6). Both questions were then summed.</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score on a scale ranging from 2 to 14.</p> <p><b>Time points measured:</b> Baseline and 8 weeks follow-up</p> <p><b>Outcome name:</b> 4) Re-reading of the mouth cancer leaflet</p> <p><b>Outcome definition:</b> Patients in the</p>	<p>Baseline:12.44 (2.12) 8 weeks:12.79 (1.87)</p> <p>Control group(s) Baseline:11.75 (2.69) 8 weeks:12.25 (2.26)</p> <p>Baseline - leaflet v non-leaflet: MWU z:-2.24 P value: 0.025</p> <p>8 weeks - leaflet v non-leaflet: MWU z:-2.48 P value: 0.013</p> <p>4) Re-reading of the mouth cancer leaflet Of the 162 respondents who replied (out of a possible 169) 31% had re-read the leaflet. Knowledge remained stable (mean change score = 0.38, median =0.7, S.D. = 3.59) in the patients that reviewed the leaflet at least once following the initial introduction at baseline (<math>z =-1.22</math>, P</p>	<p>significantly from participants by age.</p> <p>Allocation was by session so it was not truly random although this was designed to limit contamination which would have been a significant risk given the intervention was a leaflet.</p> <p>It is not absolutely clear how participants in the intervention group were prevented from filling-in some of the questionnaire while they possessed the leaflet. The fact that they needed to hand the leaflet in before the questionnaire does not guarantee against this possibility.</p> <p>The researcher (who was also the author) approached each patient so they would have known the allocation. Therefore there was no blinding.</p>

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			<p>intervention group were asked if they read the leaflet again in the weeks between receiving the leaflet and prior to completing the follow-up questionnaire (p.75 para.2).</p> <p><b>Outcome measure:</b> Question response</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> % who read leaflet</p> <p><b>Time points measured:</b> Period between baseline and 8 week follow-up</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p> <p>The Mann-Whitney U test was used to test the significance of comparisons between the intervention and control group. (p.74</p>	<p>= 0.22) whereas those who had read the leaflet only once in the waiting room, were found to have deteriorated in their knowledge (mean change score = -1.33, median = -1.3, S.D. = 3.34; <math>z = -4.26</math>, <math>P &lt; 0.001</math>). (p.75 para.2)</p> <p>The independent variables of age (<math>p=0.001</math>), smoking status (<math>p=0.03</math>) and knowledge (<math>p=0.03</math>) were found to significantly predict re-reading of the leaflet. (p.75 para.2)</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>The 8 week trial follow-up resulted in 317 useable questionnaire replies (60% response rate), including 169 in the</p>	<p><b>Evidence gaps:</b> Research is needed over the longer-term. The question remains: To what extent are these improvements, gained from access to the leaflet, sustained over time? (p.72 para.2)</p> <p><b>Source of funding:</b> Zila® sponsored the project and published the leaflet (p.72 para.3).</p>

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			<p>Table 2)</p> <p>A multiple logistic regression was used to predict re-reading of the mouth cancer leaflet. Independent variables were: age, gender, smoking status, intention to accept screen, distress, alcohol consumption and knowledge of mouth cancer. p.75 para.2)</p> <p>There is no reference to ITT being used.</p>	<p>intervention group and 148 in the control. (p.73 Fig 1 and para.7)</p> <p>Categorical variables: gender, practice, self-reported alcohol consumption, receipt of leaflet and continuous variables including age, and the 3 outcome variables were not significantly different between patients who were followed up or lost to the study. Patients who smoked were less frequent in the follow up sample (17%) compared with non-responders (26%, <math>\chi^2=4.26</math>, <math>P=0.04</math>). In addition, follow up patients claimed to be regular 6-month attendees of the dentist more frequently than non-responders (93 and 80%, respectively, <math>\chi^2=17.56</math>, <math>P=0.001</math>). (p.73 Fig 1 and para.7)</p> <p><b>Conclusion:</b></p>	

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				<p>There were 3 major findings. First, a leaflet about mouth cancer given to patients attending primary dental care services resulted in measurable benefits 2 months later. These benefits included an increase in knowledge about mouth cancer, a borderline reduction in distress about having a mouth cancer screen and an increase in the likelihood of accepting such a screen. (p.75 para.3)</p> <p>Second, the study found a lack of diminution of the effect of the leaflet after an 8 week period. (p.75 para.4)</p> <p>Thirdly, patients who claimed that they revisited the leaflet by re-reading it maintained their level of knowledge, whereas the remainder of the leaflet group (the</p>	

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				majority) who did not re-read the leaflet suffered a significant drop in knowledge. There may be an opportunity therefore to 'maximise' the effect of the mouth cancer leaflet by recommending that it is re-read. (p.75 para.5)	

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<p><b>Author:</b> Brocklehurst, P. et al</p> <p><b>Year:</b> 2013</p> <p><b>Citation:</b> Brocklehurst, P., C. Bridgman, and G. Davies, A qualitative evaluation of a Local Professional Network programme "Baby Teeth DO Matter". Community Dental Health, 2013. 30(4): p. 241-8.</p> <p><b>Country of study:</b></p> <p><b>Quality Score (++, +, or -):</b> +</p>	<p><b>Study design:</b> A qualitative programme evaluation using semi-structured interviews</p> <p><b>Research aims, objectives, and questions:</b> The objective of this study was to use a qualitative approach to examine the perceptions of dentists who led a health promotion programme entitled "Baby Teeth DO Matter". (abstract)</p> <p>The aim of the research was to qualitatively explore the role of clinical leadership in the context of the GM shadow LPN and Phase 1 and 2 of the "Baby Teeth DO Matter" to understand the impact that empowering local clinicians played in the development and running of the programme. (p.242, para.6)</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> NR</p> <p><b>State how data were collected:</b></p> <p><b>What method(s):</b> A set of opening questions were developed for the semi-</p>	<p><b>Population the sample was recruited from:</b> Local clinicians who had been involved in the planning and running of the "Baby Teeth DO Matter" programme (p.243)</p> <p><b>How sample was recruited:</b> Local clinicians who had been involved in the planning and running of the "Baby Teeth DO Matter" programme were contacted by email and invited to participate (p.243)</p> <p><b>How many participants recruited:</b> 6</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Greater Manchester</p> <p><b>Occupation:</b> Clinicians</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> Clinicians</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>Thematic analysis and coding took place.</p> <p>The researchers immersed themselves in the data by initially reading and re-reading the transcriptions before generating codes. Overarching themes were developed from the coded transcripts by organising them into clusters based on the similarity of their meaning. These were then checked against the coded extracts and the raw data to ensure that they formed a coherent pattern and were representative of what the participants were trying to convey. The coding process was undertaken manually. Specific examples were selected to create clear definitions for the coding frame. (p.243/246)</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b> (p.246)</p> <p>8 codes under 3 themes were generated:</p> <p><b>Theme 1: Impact</b></p>	<p><b>Limitations identified by author:</b></p> <p>Limitation of the programme (rather than the evaluation):</p> <ul style="list-style-type: none"> <li>- the use of financial incentives to drive the programme forward and encourage adoption (participating practices received £25 for first appointment and then £75 should the child return for a follow-up appointment after three months) (p.247, pa.3)</li> </ul> <p><b>Limitations identified by review team:</b></p> <p>Participants' characteristics are not described (except for occupation and area of study).</p> <p>Only one method used (interviews).</p> <p>Limitations of the evaluation study not identified by author.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>Another key aspect that arose from the results of the evaluation was the importance of keeping the approach and messages simple and also</p>

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	<p>structured interviews from existing research on leadership (Hoffman et al 2011; Judge et al 2004) and the NHS leadership framework. In accordance with Carter and Henderson's guidance (2007), these were open-ended questions and investigated the views and experiences of participating GPs in the "Baby Teeth DO Matter" programme and shadow LPN more broadly.</p> <p>The topic guide was developed further in parallel with the interviews to facilitate constant comparison analysis. The interviews were recorded digitally, and transcribed verbatim by one researcher.</p> <p>It was determined in advance that the interviews would continue until saturation had been reached. The saturation point was assessed by the transcriber when no new information was generated from the analyses. (p.243)</p> <p><b>By whom:</b> Researchers  <b>What setting:</b> General Dental Practice</p>	<p>who had been involved in the planning and running of the programme</p> <p><b>Exclusion criteria:</b> NR</p>	<p>Code 1 – success of the project: All of the participants stated that the programme had been successful.</p> <p>Code 2 - Down-stream to up-stream:  The involvement in the programme had shifted the perspective of GPs: <i>"...general dental practitioners have never really had an opportunity to go out into the community and use their own initiative of how to actually bring patients in..."</i></p> <p><b>Theme 2: Components of success</b></p> <p>Code 3 – Importance of "Clinically Led and Clinically Owned":  The idea of a locally led programme was widely viewed positively: <i>"...they know what's happening on the ground level, they know what's possible and what's not possible, what will work well and what won't"</i></p> <p>Code 4 – Keeping the approach simple:  All participants felt that the messages had to be simple (given the broad geographic and organisational scope of the programme): <i>"...when you've got simple messages, simple ideas,</i></p>	<p>ensuring good communication through the command and control structure. This will be a challenge to LPNs in the future as they seek to strategically lead their local clinicians who have a broad range of clinical interests. (p.247, para.4)</p> <p><b>Source of funding:</b> NR</p>

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	<b>When:</b> NR		<p><i>simple models if you go out and deliver it's a lot more effective and efficient</i>"</p> <p>Code 5 - Importance of networking: The structure used in the programme was based on "Securing Excellence in Commissioning Primary Care" (NHS Commission Board, 2012) and proved to be an important component of its success: <i>... I think it's been a success in using general practitioners and them radiating it out to other practitioners and getting them involved</i>"</p> <p>Code 6 – Importance of Dental Public Health: Dental Public Health input was considered to be important.</p> <p>Code 7 - Importance of task and finish: The task and finish resources were also critical: <i>...admin was a very important role...we need posters, we need banners...</i>"</p> <p><b>Theme 3: The future</b></p> <p>Code 8 – Threats to the future of the Local Professional Network: A significant concern amongst the clinicians after the</p>	

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			<p>programme had been delivered was whether the LPN would be allowed to continue its work going forward, or whether it would be re-organised by the emerging new NHS structures:</p> <p><i>“...different bodies and parties with separate agendas all wanting to maybe take over that or infiltrate...”</i></p> <p><b>Conclusions:</b> (p.247)</p> <p>“Clinically Led” and “Clinically Owned” projects create and empower community-facing practitioners. They also build capacity and develop personal skills in line with the fundamental principles of the Ottawa Charter. Critical for success in programmes of this nature are: Dental Public Health input; clarity of communication within the network; and, the necessary resources to support both clinicians and the project management costs.</p>	

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<p><b>Author:</b> Clarkson, J.E., Young, L., Ramsay, C.R., Bonner, B.C., and Bonetti, D.</p> <p><b>Year:</b> 2009</p> <p><b>Citation:</b> Clarkson, J.E., et al., How to influence patient oral hygiene behaviour effectively. <i>Journal of Dental Research</i>, 2009. 88(10): p. 933-7.</p> <p><b>Aim of Study:</b> To compare the effectiveness of an evidence-based intervention, framed with psychological theory, with routine care, in improving patients' oral hygiene behaviour. Additionally, the study explored contamination effects of different trial methodologies, i.e. how likely it is that the control group</p>	<p><b>Source Population(s):</b> Dentate adults who had already made an appointment for a routine check-up and had probing of the gingiva not contraindicated at the time of the appointment.</p> <p><b>Setting:</b> Primary care setting in Scotland</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Patient RCT: mean (SD) Control: 36.5 (12.9) Intervention: 38.5 (14.7)</p> <p>Cluster RCT: mean (SD) Control: 36.5 (14.0) Intervention: 34.9 (12.7)</p> <p><b>Sex:</b> Patient RCT: Female: n (%)</p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> A patient-randomised controlled trial and a cluster RCT on the same intervention were conducted independently.</p> <p><b>Report how confounding factors were minimised:</b> Reported change to a powered or manual toothbrush and if hygiene advice was given to the control group at baseline appointment.</p> <p><b>Programme/Intervention description:</b> Intervention was the same for both RCTs</p> <p><b>What was delivered:</b> Our intervention included all of these elements [outlined in theoretical approach below] to create a complete, evidence based package as the most likely means of effectively influencing the oral hygiene behaviour of patients within a</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Oral health (clinical)</b></p> <p><b>Outcome name:</b> % of surfaces with bleeding</p> <p><b>Outcome definition:</b> We used the Silness and Loe index to calculate the percentage of surfaces with plaque and showing gingival bleeding on gentle probing.</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (plus or minus 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Percentage</p> <p><b>Outcome name:</b> % of surfaces with plaque</p> <p><b>Outcome definition:</b> We used the Silness and Loe index to calculate the percentage of surfaces with plaque and showing gingival bleeding on</p>	<p><b>Oral health (clinical) results:</b></p> <p><b>% of surfaces with bleeding (Patient RCT): Mean [SD]</b> Intervention: 15.5 [16.7] Control: 21.8 [25.4] Mean difference [95% CI]: -3.5 [-11.8, 4.8] P = 0.404</p> <p><b>% of surfaces with bleeding (Cluster RCT): Mean [SD]</b> Intervention: 21.6 [20.6] Control: 26.0 [26.3] Mean difference [95% CI]: -7.4 [-15.0, 0.2] P = 0.057</p> <p><b>% of surfaces with plaque (Patient RCT): Mean [SD]</b> Intervention: 27.6 [19.8] Control: 31.2 [23.5] Mean difference [95% CI]: -4.5 [-12.7, 3.7] P = 0.279</p> <p><b>% of surfaces with plaque (Cluster RCT): Mean [SD]</b> Intervention: 31.2 [26.4] Control: 54.0 [31.1]</p>	<p><b>Limitations identified by author:</b> The authors state that the lack of blinding might explain why only the cluster RCT showed a statistically significant effect of the intervention on the clinical outcomes.</p> <p><b>Limitations identified by review team:</b> It is not clear how participants were recruited or whether the characteristics outlined in Table 1 reflect the source population. Only 6 of the 93 dentists invited did not participate while 57% of invited patients agreed to participate. However it is not clear whether there were any</p>

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<p>also received the intervention, by testing the intervention in 2 trials with different randomised designs.</p> <p><b>Study Design:</b> Parallel RCT and cluster RCT on the same intervention were conducted independently.</p> <p><b>Quality Score (++, +, or -): +</b></p> <p><b>External Validity (++, +, or -): +</b></p>	<p>Control: 84 (57.5) Intervention: 95 (65.5)</p> <p>Cluster RCT: Female: n (%) Control: 84 (57.5) Intervention: 95 (65.5)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Scotland</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> Eligible clinicians were dentists who spent their first year after graduation in Scotland. Eligible patients were dentate adults who had already made an</p>	<p>primary care environment. The evidence-based intervention (a powered toothbrush and behavioural advice on timing, method and duration of toothbrushing) was framed to target oral hygiene self efficacy (social cognitive theory) and action plans (implementation theory). The content and the delivery of the intervention were standardised as a series of steps. Social cognitive theory was applied using a 'Tell, Show, Do' approach of dentists giving advice to patients. At the end of the advice patients were given a toothbrush to take away with them. Implementation theory was applied by asking patients when was the best time for them to use their toothbrushes and by the dentist eliciting an action plan.</p> <p><b>Theoretical basis:</b> Social Cognitive Theory (Bandura 1999) which proposes that a key variable influencing behaviour is self-efficacy, assessed by a person's confidence in his/her ability to perform the behaviour.</p>	<p>gentle probing.</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Percentage</p> <p><b>Behavioural:</b></p> <p><b>Outcome name:</b> Timing</p> <p><b>Outcome definition:</b> "On average how often do you brush your teeth?"</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Score. A correct response of at least twice a day was given a score of 1. All other responses were 0.</p> <p><b>Outcome name:</b> Duration</p> <p><b>Outcome definition:</b> "On average how long do you take to brush your teeth?"</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b></p>	<p>Mean difference [95% CI]: -16.7 [-25.7, -7.7] P &lt;0.001</p> <p><b>Behavioural results:</b></p> <p><b>Timing (Patient RCT): Mean [SD]</b> Intervention group: 100 [85.5] Control group: 83 [71.6] Odds ratio [95% CI]: 2.8 [1.2, 6.9] P &lt;0.05</p> <p><b>Timing (Cluster RCT): Mean [SD]</b> Intervention group: 143 [86.7] Control group: 158 [78.6] Odds ratio [95% CI]: 2.1 [1.2, 3.6] P &lt; 0.01</p> <p><b>Duration (Patient RCT): Mean [SD]</b> Intervention group: 68 [58.6] Control group: 51 [44.0] Odds ratio [95% CI]: 3.3 [1.7, 6.5] P &lt;0.001</p> <p><b>Duration (Cluster RCT): Mean [SD]</b></p>	<p>differences between the demographics of the study population (Table 1) and those of the eligible population (not reported). No information provided on exactly how patients were randomised. Information may be available in the appendices which we do not have. Dentists in the patient RCT were aware of each patient's group allocation. It was also theoretically possible for dentists to have manipulated the results in the cluster RCT. Less than 20% (19% and 16%) dropped out of patient RCT and there was no significant difference in any baseline measure between patients who did or did not</p>

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	<p>appointment for a routine check-up and had probing of the gingiva not contraindicated at the time of the appointment.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p>	<p>Another model is Implementation Intention Theory (Gollwitzer, 1999; Webb and Sheeran, 2004) which proposes that making an explicit action plan about where and when a behaviour will be performed increases the person's likelihood of performing it.</p> <p>Both of these theories were used to frame and evidence based intervention. The best evidence available suggest that dentists should provide chair-side oral hygiene advice about the method and timing of toothbrushing, provide or recommend the use of a powered toothbrush with a rotation oscillation action, and provide instruction in the use of the toothbrush (e.g. Kay and Locker 1998; SIGN 2002; Marinho et al 2003; Robinson et al 2003).</p> <p>The study hypothesis was that an evidence based intervention, framed with psychological theory, would improve patients' oral hygiene behaviour.</p> <p><b>By whom:</b> Dentist</p> <p><b>How delivered:</b></p>	<p>Score. A correct response of at least 2 minutes was given a score of 1. All other responses were 0.</p> <p><b>Outcome name:</b> Method</p> <p><b>Outcome definition:</b> "Usually, when you finish brushing your teeth, do you...?"</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Score. A correct response of spit but do not rinse was given a score of 1. All other responses were 0.</p> <p><b>Outcome name:</b> Oral Hygiene Self-efficacy (toothbrushing confidence)</p> <p><b>Outcome definition:</b> Patients were asked how confident they were on a 7-point scale: following advice from their dentist about brushing their teeth; brushing their teeth as often as they should; the way that they should.</p> <p><b>Outcome measure validated:</b> NR</p>	<p>Intervention group: 117 [70.9]</p> <p>Control group: 91 [45.3]</p> <p>Odds ratio [95% CI]: 3.0 [1.9, 4.8]</p> <p>P &lt; 0.001</p> <p><b>Method (Patient RCT): Mean [SD]</b></p> <p>Intervention group: 62 [54.9]</p> <p>Control group: 40 [36.0]</p> <p>Odds ratio [95% CI]: 3.5 [1.8, 6.6]</p> <p>P &lt; 0.001</p> <p><b>Method (Cluster RCT): Mean [SD]</b></p> <p>Intervention group: 105 [65.2]</p> <p>Control group: 62 [31.2]</p> <p>Odds ratio [95% CI]: 5.3 [3.6, 7.8]</p> <p>P &lt; 0.001</p> <p><b>Oral Hygiene Self-efficacy (Patient RCT): Mean [SD]</b></p> <p>Intervention group: 28.3 [5.8]</p> <p>Control group: 26.7 [5.2]</p> <p>Mean difference [95% CI]: 1.5 [0.2, 2.8]</p> <p>P &lt; 0.05</p>	<p>return a questionnaire. However drop-out rate in cluster RCT was over 20% and there were many more drop-outs from the intervention group than from the control group [Note: this assumes that the sentence in 935 para.8 on the return of questionnaires in the cluster group is a mistype]. Most outcome measures were patient reported and there was no indication that they had been validated. The paper outlines the required number of dentists and patients needed for 80% power for both a patient and cluster RCT in relation to the clinical outcomes. However the number of dentists and patients in both trials is a little lower</p>

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		<p>(a) Modes of delivery - Chair-side oral hygiene advice from Dentist using a “tell, show, do” model. F</p> <p>(b) Framing the health message, Positive – patients asked to clean teeth in front of dentist, they are then corrected if required and once they are confident they are praised.</p> <p>(c) Approaches to present the information, Tell – Patient told to brush twice a day for 2 minutes, using an electronic toothbrush and fluoride toothpaste and to spit but not rinse. Show – Dentist shows toothbrushing technique Do – Dentist corrects patient if necessary</p> <p>(d) Whether it is standalone or incorporated into</p>	<p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Mean score</p> <p><b>Outcome name:</b> Planning</p> <p><b>Outcome definition:</b> Patients were asked if they had plans relating to duration, timing and method of toothbrushing.</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Baseline and 8 weeks (+/- 2 weeks) for both trials</p> <p><b>Unit of measurement:</b> Score based on Yes=1 and No=2. Scores were summed.</p> <p><b>Method of analysis:</b> Analyses were by intention to treat. Chi-squared tests and t-tests examined baseline differences between the 2 trials. Intervention effects were examined with generalised linear models (patient RCT) and a mixed effect model (cluster RCT) with analyses adjusted for</p>	<p><b>Oral Hygiene Self-efficacy (Cluster RCT): Mean [SD]</b> Intervention group: 28.7 [4.4] Control group: 27.0 [5.3] Mean difference [95% CI]: 0.9 [0.0, 1.8] <math>P &lt;0.05</math></p> <p><b>Planning (Patient RCT): Mean [SD]</b> Intervention group: 2.4 [0.7] Control group: 1.8 [0.9] Mean difference [95% CI]: 0.6 [0.4, 0.7] <math>P &lt;0.001</math></p> <p><b>Planning (Cluster RCT): Mean [SD]</b> Intervention group: 2.5 [0.8] Control group: 1.9 [0.8] Mean difference [95% CI]: 0.6 [0.4, 0.8] <math>P &lt;0.001</math></p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p>	<p>than the requirements. Furthermore a large proportion of the patients dropped-out of the clinical follow-up. Effect sizes not reported although odds ratios available for dichotomous outcomes.</p> <p><b>Evidence gaps:</b> A plausible explanation is that dentists in the intervention arm of the cluster RCT were simply more practiced in delivering the intervention, and so were more consistently effective. This may be an issue to be explored in future patient RCTs. Further investigation is also needed to identify the relative impacts of the different elements of the intervention.</p>

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		<p>wider health messages: Standalone</p> <p>(e) Environment in which health message is delivered: Dental clinic</p> <p><b>How long for:</b> Approximately 5 minutes</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> The control group received routine care, even if that included oral hygiene advice</p> <p><b>By whom:</b> Dentist</p> <p><b>Sample size at baseline:</b></p> <p><b>Patient RCT:</b> Total sample N = 300 Randomised to Intervention group N = 149 Randomised to Control Group N = 151</p> <p><b>Cluster RCT:</b> Total sample N = 50 dentists/478 patients Randomised to Intervention group N = 244 Randomised to Control Group N = 234</p>	<p>baseline scores when available. Bleeding/plaque scores were weighted by numbers of margins/surfaces per patient. Outcomes across the 2 trials were pooled by standard fixed effect meta-analysis methods that weighted by the standard error of effect sizes.</p>	<p>Patient RCT: In the patient RCT the number of questionnaires not returned at follow-up was similar in both groups (19% v 16%) [note: not clear which one is which] with no significant difference in any baseline measure between patients who did or did not return a questionnaire.</p> <p>Cluster RCT: In the cluster RCT fewer questionnaires were returned by the intervention group (12% v 31%) but there was no significant group difference in any baseline measure.</p> <p><b>Conclusion:</b> A simple theory-based intervention delivered within the constraints of a primary care environment was more effective than routine care in influencing patients' oral hygiene cognitions, behaviour,</p>	<p>Previous studies have not explored the cognitive impact of the use of a powered toothbrush. Nevertheless, powered or manual, a toothbrush needs to be used and used properly to improve oral hygiene. It is therefore most likely that a combination of the powered toothbrush, behavioural advice, and the theoretical framing which produced the intervention effects.</p> <p><b>Source of funding:</b> Study was supported by the Scottish Dental Practice Based Research Network (SDPBRN); NHS Education for Scotland (NES); Dental Health Services Unit, University of</p>

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		<p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b>            Baseline differences are compared but not commented on and there are no p values to ascertain statistical significance. The differences appear to be minor in all areas covered which include gender, smoking behaviour, toothbrush use and cognitive, behavioural and clinical outcomes. The mean bleeding levels amongst the control group (32.4% with SD at 25.6%) were slightly higher than for the intervention group (27.7% with SD at 27.7).</p> <p><b>Study sufficiently powered (power calculations and provide details):</b>            The paper states that a patient RCT would require 38 dentists and 10 patients per dentist for 80% power at a 5% significance level for a 10% reduction in bleeding and plaque to be detected. This would mean the study required 380 patients in the trial but only 300 were</p>		and health.	Dundee; Health Services Research Unit, University of Aberdeen; University of Manchester; Chief Scientist Office of the Scottish Government Executive; and Gillette Ltd, Oral-B Clinical Research. All views expressed are the authors' and not necessarily those of the funding bodies. The authors have no competing interests.

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		<p>included so the 80% figure must not have been met. Furthermore only 94 participants in the patient RCT received a follow-up clinical examination [note: impact on power is not explicitly stated].</p> <p>A cluster RCT required 55 dentists and 10 patients per dentist to give a similar power. Again this condition wasn't quite met as there were 478 patients in the trial as opposed to 550. Furthermore only 187 patients in the cluster RCT received a follow-up clinical examination [again the implications for power were not explicitly stated].</p>			

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<p><b>Author:</b> T.A. Dyer and P.G. Robinson</p> <p><b>Year:</b> 2006</p> <p><b>Citation:</b> Dyer, T.A. and P.G. Robinson, General health promotion in general dental practice--the involvement of the dental team Part 2: A qualitative and quantitative investigation of the views of practice principals in South Yorkshire. British Dental Journal, 2006. 201(1): p. 45-51; discussion 31.</p> <p><b>Country of study:</b> England</p> <p><b>Quality Score (++, +, or -):</b> +</p>	<p><b>Study design:</b> Mixes-method study comprising:</p> <ul style="list-style-type: none"> <li>• a cross-sectional qualitative research using semi-structured interviews of a purposive sample of 10 practice principals.</li> <li>• a cross-sectional survey of a practice principal from very dental practice in South Yorkshire using a self-complete questionnaire (p.45 abstract)</li> </ul> <p>Qualitative methods suit topics such as this where there is little pre-existing knowledge.</p> <p>However qualitative research cannot make quantifiable generalisations so a cross-sectional survey of dentists was also undertaken. (p.46 para.6)</p> <p><b>Research aims, objectives, and questions:</b></p> <p>To investigate the factors that might influence the provision of general health promotion through 7 different health interventions by dental teams in general dental practice. (p.45 abstract) This includes</p>	<p><b>Population the sample was recruited from:</b></p> <p><b>Qualitative</b> - 10 potential participants were selected from the four health communities in South Yorkshire. (p.46 para 8)</p> <p><b>Quantitative</b> - All 199 dental practices in South Yorkshire (p.46 para 11)</p> <p><b>How sample was recruited:</b></p> <p><b>Qualitative</b> - Purposive sampling of principal dentists ensured a full range of perspectives was included in the study. Time since qualification and the NHS/private mix of a practice 10,11 both influence perspectives of involvement in general health promotion in quantitative studies. Other factors such as dentists' sex and practice size were also assumed to be influential variables. (p.46 para 8)</p> <p><b>Quantitative</b> - A self-administered questionnaire was sent to a principal</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p><b>Qualitative:</b></p> <p>Content analysis was used to identify codes and categorise the primary pattern in the data. This analysis was informed by the aims of the study and as such asked three broad questions. Firstly, it asked what the data suggest about the range of dentists' views of general health promotion through public health interventions. Secondly, what they suggest about the range of dentists' views of the dental team's involvement in this activity; and lastly whether any variation in views can be adequately conceptualised. The data were analysed by reading each transcript and coding areas of interest on index cards.33,34 From these codes, categories were formed and added to as each transcript was analysed. A detailed descriptive account of emergent theory was then produced which was independently checked by another researcher (PGR). The data are presented below within major themes that emerged from the analysis with quotations to illustrate the findings and allow the reader to judge interpretation. (p.46 para 10)</p>	<p><b>Limitations identified by author:</b></p> <p>As always, these data should be interpreted with care. However the response rate to the survey (83.4%) is considerably higher than average, 57 minimising sampling error. Also, analysis of the responses to the second and third mailings found respondent characteristics and attitudinal data were comparable, suggesting minimal non-response bias. Furthermore the qualitative and quantitative data broadly corroborated each other. However, the extent to which these findings can be generalised to other regions of the UK will also depend on logical inference as South Yorkshire has characteristics that may distinguish it from some areas. For example, the area contains a dental school where many of the dentists trained. Furthermore participants' attitudes to PCDs may be related to the expansion of PCD training programmes at that school. (p.50 (para 13)</p>

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	<p>dentists' views on:</p> <ul style="list-style-type: none"> <li>General health promotion through preventive health interventions; and</li> <li>Dental teams' involvement in this work.</li> </ul> <p>And by describing dentists':</p> <ul style="list-style-type: none"> <li>Level of involvement in 7 different public health interventions;</li> <li>Views of the relevance of these interventions to their work;</li> <li>Views of dentists' and PCDs' involvement in these interventions, including any perceived barriers to such activity.(p.49 para.5)</li> </ul> <p><b>Theoretical approach [grounded theory, IPA etc]:</b></p> <p><b>Qualitative:</b></p> <p><b>State how data were collected:</b> Interviews were audiotaped and transcribed as fully as possible. A synopsis of each interview, together with a full transcript, was sent to the relevant participant who was invited to make comments if they were at odds with their intended meaning. No modifications</p>	<p>dentist at all 199 dental practices in South Yorkshire. The questionnaire was then piloted in 2 stages but required minimal modification. One principal was selected from each practice using random number tables. (p.46 paras 11-12)</p> <p><b>Qualitative:</b></p> <p><b>How many participants recruited:</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> Dentists</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Quantitative:</b></p> <p><b>How many participants recruited:</b> 84.9% of 199 clinics receiving questionnaires. 3 were not</p>	<p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>NOTE:</b> Paragraph numbering for the results section is based on paragraphs separated by blank space.</p> <p><b>Qualitative results:</b></p> <p><b>NOTE:</b> Some of these findings are more about whether dentists feel they should make general health interventions alongside oral health – hence they aren't relevant to this particular study.</p> <p>The qualitative data could be arranged on a conceptual framework based on 2 core categories: Seeing health or disease and The structure of dental practice (this is shown in Fig 1 of the paper) (p.47 para.1)</p> <p><b>Seeing health or disease</b></p> <p>Dentists' views could be arranged on a spectrum according to the degree to which their outlook was disease (emphasising curative treatments) or health-focussed (emphasising prevention). Where the more disease-focussed dentists did describe any involvement, it tended to be centred on the mouth. For instance, smoking cessation advice might be given</p>	<p>to p.51 (para.1))</p> <p><b>Limitations identified by review team:</b></p> <p>The paper does not specify the response rate for the qualitative study which is a major weakness. In addition there is ambiguity about the responses from the second and third mailings of the quantitative survey as these results aren't included. Instead the authors simply say they are comparable without including any figures for significance.</p> <p>The paper does not describe how the research was presented and the relationship between the researcher and participants is not discussed.</p> <p>While the qualitative sample appears to be based on a sound approach the context of the different participants in relation to this sampling approach is not explained and nor are any other characteristics of the sample provided.</p> <p>The qualitative analysis procedure is made explicit</p>

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	<p>were requested.</p> <p><b>What method(s):</b> <b>By whom:</b> NR <b>What setting:</b> NR <b>When:</b> NR</p> <p><b>Quantitative:</b></p> <p><b>State how data were collected:</b> A letter of notification was sent to all recipients 2 weeks before distribution of the questionnaire informing them of the study. Questionnaires were mailed with a covering letter and postage-paid envelope and were coded so that non-responders could be re-mailed. Areas of enquiry included: practice details; views of the relevance of health interventions to their practice; levels of, and barriers to, involvement in health interventions for both dentists and PCDs (professionals complementary to dentistry); whether respondents would be happy for suitably trained PCDs to deliver health interventions in their practice. The health interventions inquired on were: prevention of smoking/tobacco use; smoking cessation; advice on alcohol</p>	<p>completed adequately leaving 83.4% useable for analysis. (p.48 para.14)</p> <p><b>Sample characteristics:</b> <b>Age:</b> NR <b>Sex:</b> Male=87.9% (p.48 para.14) <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> NR <b>Occupation:</b> Dentists <b>Education:</b> NR <b>Socioeconomic position:</b> NR <b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p>because of staining on patients' teeth or mucosal changes rather than for broader health promoting reasons. (p.47 paras 2-4)</p> <p><b>The structure of dental practice</b></p> <p><b>Perceptions of the role of the dental practice:</b> Often the health-focussed dentists felt that dental practices' role could include health interventions. Views of the relevance of particular public health interventions to dental practice varied considerably. Generally participants felt smoking cessation was relevant to dental practice, whereas there were diverse views on blood pressure monitoring.(p.47 paras 6-8)</p> <p><b>PCDs and dental practice:</b> There was broad agreement that a team approach will become more important in dental practice, especially if health interventions are to be undertaken, but participants recognised that not all dentists held this view: <i>'There is a fair proportion of dentists who think that dentists do dentistry and that's it.'</i> (John, 28.11.02) (p.47 para.11)</p> <p><b>Commitment and involvement:</b> All participants were already involved in health interventions. However involvement beyond smoking cessation and dietary advice varied considerably. Many health-focussed participants</p>	<p>however the same cannot be said for the quantitative element. P values are quoted based on significance tests but it is not stated what tests were used (presumably chi-square). Surprisingly, given the sample was quite large and a result of randomised design, the paper does not include any tests of whether the views of "health" oriented and "disease" oriented dentists differed. This was probably because the division between these 2 types of dentists was only made in the qualitative element of the study. However such an exercise in the quantitative element could have really enhanced the value of the paper and provided and important reinforcement to the qualitative findings.</p> <p>Generally the findings are clear and internally consistent. However more information on the qualitative sample would have made them more convincing.</p> <p>Some of the paper is</p>

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	<p>consumption; advice on diet and calorie intake; advice on prevention of skin cancer; advice on physical exercise; blood pressure monitoring. (p.46 paras 12-13)</p> <p><b>What method(s):</b> Cross sectional postal survey.</p> <p><b>By whom:</b> Sent by researchers but self completed.</p> <p><b>What setting:</b> Sent to dental practices</p> <p><b>When:</b> Mailing of quantitative survey was in 3 stages, between April 2003 and July 2003</p>		<p>would have liked to undertake more oral disease prevention. Others, with a more disease focus, expressed reticence and tended to get little enjoyment from preventive dentistry:</p> <p><i>“There is not much pleasure to be gained out of oral hygiene instruction in my experience ... I just don’t think I would enjoy it [health interventions] really.”</i> (Kevin, 17.02.03) (p.47 para.14)</p> <p>Views on commitment and involvement of PCDs varied.</p> <p>Participants were keen to delegate preventive work to PCDs whether related to oral or general health. However, some had more negative views of the role of PCDs and health interventions, typified by this medicalised view of prevention:</p> <p><i>“If it requires medical background knowledge then the hygienists shouldn’t be doing it anyway.”</i> (Laurence, 18.12.02) (p.47 (para.17) to p.48 (para.1))</p> <p><b>Competence:</b> Most participants did not feel adequately trained to undertake health interventions. They particularly expressed a lack of confidence in their communication skills. (p.48 para.3)</p> <p>Advice on alcohol consumption was</p>	<p>focussed on non-oral health interventions.</p> <p>The study was approved by an ethics committee but other than that there is no information on ethical issues.</p> <p><b>Evidence gaps and/or recommendations for future research:</b> NR</p> <p><b>Source of funding:</b> NR</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>perceived to be difficult, especially by those with a disease focus:</p> <p><i>“They might think it was prying and not actually something that is anything to do with their mouth and teeth – which is what they expect a dentist to be asking about.”</i> (Kevin, 17.02.03) (p.48 para.4)</p> <p><b>Effectiveness:</b> No participant raised the issue of effectiveness of health interventions until the researcher introduced it. Of note was that all of the discussion was anecdotal rather than evidence-based. Most perceived PCDs to be effective. (p.48 para.7)</p> <p><b>Resources:</b> The fee-per-item payment system discouraged dentists undertaking work for which they could not claim a fee, whether they were health or disease-orientated. Many felt that dentists' involvement in health interventions would be a poor use of their time but many would have been happy for PCDs to be involved as 'loss-leaders'. However, many felt that PCDs had more time for prevention. (p.48 paras.10-12)</p> <p><b>Quantitative results:</b></p> <p><b>Principal dentists' views on the relevance of the 7 health interventions</b></p> <p>Proportion of dentists (base=164) who</p>	

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			<p>thought that public health interventions had at least some relevance to their practice:</p> <ul style="list-style-type: none"> <li>• Smoking prevention: 93.9%</li> <li>• Smoking cessation: 92.1%</li> <li>• Alcohol consumption advice: 79.9%</li> <li>• Dietary advice: 88.4% (p.48 para.15)</li> </ul> <p>NOTE: There are 7 interventions in total but 3 are not related to oral health so are not included.</p> <p><b>Frequency of involvement in health interventions</b></p> <p>Most patients reported undertaking health interventions at least occasionally.(p.49 para.1)</p> <p>Results for those who never undertook interventions (base= 164):</p> <ul style="list-style-type: none"> <li>• Smoking prevention: 14.6%</li> <li>• Smoking cessation: 13.4%</li> <li>• Alcohol consumption advice: 39.6%</li> <li>• Dietary advice: 19.0% (p.48 Table 1)</li> </ul> <p><b>Views of principal dentists of the main barriers to dentists</b></p> <ul style="list-style-type: none"> <li>• The most frequently reported barriers to dentists and PCDs were 'insufficient funding' and 'poor use of time'.</li> </ul>	

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			<ul style="list-style-type: none"> <li>Significantly fewer dentists (<math>p&lt;0.05</math>) perceived 'poor use of time' and 'lack of training/knowledge' and 'unlikely to be effective' as barriers for PCDs than they did for dentists.</li> <li>'Unlikely to be effective' and 'likely to alienate patients' were reported most frequently for both dentists and PCDs for advice on alcohol consumption. (p.49 para.2)</li> </ul> <p><b>PCDs undertaking health interventions in dental practice</b></p> <p>If these barriers were addressed, the proportion of dentists (<math>n = 166</math>) who agreed that appropriately trained PCDs could undertake health interventions were as follows:</p> <ul style="list-style-type: none"> <li>Smoking prevention: 74.2%</li> <li>Smoking cessation: 74.8%</li> <li>Alcohol consumption advice: 64.5%</li> <li>Dietary advice: 74.7% (p.48 para.3)</li> </ul> <p><b>Responses to second and third mailings of the questionnaire</b></p> <p>A separate analysis of data from the second and third mailings revealed that dentists' and practices' characteristics were similar to those of the first. The attitudinal data were also comparable. (p.49 para.4)</p> <p><b>Conclusions:</b> Dentists with a health</p>	

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			<p>focus appeared more likely to support a preventive approach and to have a broader view of the role of the dental practice. They supported the use of PCDs, often citing the benefits of skill mix. They also perceived that they would be keen and able, having received necessary training, to extend their role to undertake health interventions. In contrast, disease-focussed dentists tended toward a traditional, specific remit of the dental practice with less enthusiasm toward prevention. They had a positive view of PCDs but this often emphasised efficient treatment delivery. (p.49 para.6)</p> <p>Apart from advice on physical exercise and blood pressure monitoring, the qualitative and quantitative parts of this study indicate that the health interventions are considered to be broadly relevant to dental practice. However, levels of involvement in all health interventions were lower than might be expected given these views (Table 1). These findings are compatible with existing data on smoking cessation, alcohol counselling and blood pressure monitoring. (p.50 para.2)</p> <p>As well as a dentists' health-disease orientation, other barriers to dental involvement in this work related to The structure of dental practice. Barriers</p>	

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			<p>identified largely reflected the inflexibility of the current GDS and informed the content of the questionnaire. (p.50 para.4)</p> <p>The most commonly reported barriers were 'insufficient funding' and 'poor use of time'. This concurs with previous research on smoking cessation. Given the fee-per-item payment system, the high treatment need in the area and workforce shortage this is unsurprising. Any initiative to increase involvement in interventions may fail unless workforce shortages are addressed. (p.50 para.5)</p> <p>It is surprising that 'lack of training/knowledge' and 'unlikely to be effective' were not cited more often as barriers to involvement, given the lack of evidence of effectiveness and the limited training of most dentists in this work. Although participants in the qualitative study frequently cited a lack of training as a barrier to involvement, they rarely referred to effectiveness without being prompted, and when they did the evidence was largely anecdotal. In part this may reflect a lack of familiarity with the concept of evidence-based dentistry, as has been reported previously. (p.50 para.6)</p> <p>Given the workload of dentists and chronic disease prevalence in the UK, the use of PCDs to deliver health interventions seems sensible. However</p>	

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			<p>it is unclear whether the recent expansion of PCD training could meet this demand. Also it is essential that PCDs' remuneration encourages them to remain within the NHS — in some areas 80% of dental hygienists work exclusively privately. Local commissioning could provide opportunities to recruit more PCDs and remunerate them appropriately. (p.50 para.11)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> Fjellstrom M; Yakob M; Soder B  <b>Year:</b> 2010  <b>Citation:</b> Fjellstrom M; Yakob M; Soder B (2010) A modified cognitive behavioural model as a method to improve adherence to oral hygiene instructions--a pilot study. International Journal of Dental Hygiene 8, 178-182  <b>Country of study:</b> Sweden  <b>Aim of Study:</b> The hypothesis was that the use of CBT leads to better adherence to oral hygiene	<b>Source Population(s):</b> Sweden  <b>Setting:</b> Not clear  <b>Sample characteristics:</b> <b>Age:</b> 20-30 years old <b>Sex:</b> Female <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> NR <b>Occupation:</b> NR <b>Education:</b> Physiotherapeutic students <b>Socioeconomic position:</b> NR <b>Social capital:</b> NR  <b>Eligible population:</b> All healthy, and all had teeth, but the third molars were excluded [p 189, para.6]	<b>Method of allocation:</b> Participants were divided into 2 groups by drawing of lots, the control group and the CBT group. This study was an examiner blinded.  <b>Report how confounding factors were minimised:</b> [quality assessment]  <b>Programme/Intervention description:</b> <b>What was delivered:</b> At the first visit, all the participants answered the self-reporting questionnaire. Oral clinical examinations were performed, and the parameters included were: Plaque index (PI) by recording the presence of plaque on mesial, distal, buccal and lingual surfaces after painting Diaplac on all exposed tooth surfaces (16), and the red colour was also for a pedagogic purpose. Gingival-index (GI) (17) and gingival bleeding index (GBI) (18) was recorded. Toothbrush (19) and dental floss instructions on both model and in the patient's mouth were given, and the patient practiced the techniques during the visit. The information to the participants consisted of traditional education and by showing pictures of periodontal health and disease.	<b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):  <b>Outcome name:</b> Gingival Index <b>Outcome measure validated:</b> NR <b>Unit of measurement:</b> Level (lower is better) <b>Time points measured:</b> After 3 weeks  <b>Outcome name:</b> Plaque Index <b>Outcome measure validated:</b> NR <b>Unit of measurement:</b> Percentage <b>Time points measured:</b> After 3 weeks  <b>Outcome name:</b> Gingival Bleeding Index	<b>Oral health (clinical) results:</b>  <b>Gingival Index (Mean value)</b> Baseline Control Group: 1 Post Intervention Control Group: 1 Baseline CBT Group: 2 Post Intervention: 0  <b>No p-values provided</b>  <b>Plaque Index (Percentage)</b> Baseline Control Group: 55.5 Post Intervention Control Group: 44.5 Baseline CBT Group: 77.5 Post Intervention: 8.5  <b>No p-values provided</b>  <b>Gingival Bleeding Index (Percentage)</b> Baseline Control Group: 23.5 Post Intervention	<b>Limitations identified by author:</b> Time is however a factor to consider, it takes more time using CBT compared with giving information in a traditional way. Therefore, the time limit has been a problem, because longer time with the patient is necessary when using CBT. [p 181, para.2 – p 182, para.1]  A compilation of studies made so far on the subject of psychological interventions for change in behaviour in view of odontological prophylaxis resulted in the increase of oral hygiene in the test people. But the studies did not show any greater effect on pocket-depth. The quality on the

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<p>habits compared with traditional instructions. The purpose of this project was to create a modified CBT model to determine the impact on increased adherence to oral hygiene instructions. And in a pilot study test, this model was compared with traditional instructions. [p 179, para.4]</p> <p><b>Study Design:</b> Controlled pilot study</p> <p><b>Quality Score (++, +, or -): ++</b></p> <p><b>External Validity</b>(++, +, or -): - (not based on an average of scores) this study is not meant to have external validity as a pilot study of 4</p>	<p>Healthy and had teeth [p 179, para.6]</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> NR</p>	<p>The CBT group was further taught to process the given information by keeping a diary about thoughts and feelings that develop during or prior to tooth brushing and flossing during 2 weeks. They were asked to visualise the toothbrush and dental floss against the tooth while using the tool and to reward themselves after cleaning by letting the tongue feel the smooth surface of the clean teeth.</p> <p>All participants received a toothbrush, a roll of floss and professional tooth cleaning at the first visit for the same basic conditions. After 3 weeks, the participants returned for oral clinical re-examination. They all answered the same self-reported questionnaire, and PI, GI and GBI was registered again. The CBT group brought their diaries for evaluation. The 4 participants cooperated of their own free will and were informed that they could interrupt their participation at any time. [p 179, para.6]</p> <p><b>Theoretical basis:</b> CBT</p> <p><b>How often:</b> The pilot study included 2 visits with 3 weeks of interval.</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> At the first visit, all the participants answered</p>	<p><b>validated:</b> NR</p> <p><b>Unit of measurement:</b> Percentage</p> <p><b>Time points measured:</b> After 3 weeks</p> <p><b>Behavioural</b></p> <p><b>Outcome name:</b> Self-reported questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Various open/closed questions</p> <p><b>Time points measured:</b> After 3 weeks</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): NR</p>	<p>Control Group: 17</p> <p>Baseline CBT Group: 24.5</p> <p>Post Intervention: 0</p> <p><b>No p-values provided</b></p> <p><b>Behavioural results:</b></p> <p><b>Self-reported Questionnaire</b></p> <p>The results of the self-reported questionnaire at the first visit showed varied knowledge about gingivitis and oral hygiene habits in both groups. The participants had different dental floss habits. 3 of the participants answered that their gingiva bleeds when cleaning their teeth. One of the participants answered that she had good oral health, and 3 answered that their oral health could be better (Tables 1 and 2).</p>	<p>studies was low, and there is a need to increase the demands on the methods used in studies in the future. Psychological treatments are complex as it is difficult to blind patients and therapist to treatment condition and in this study the examiner was not blinded. [p 182, para.1]</p> <p><b>Limitations identified by review team:</b></p> <p>Did not report any details on source population, or describe recruitment process.</p> <p>Details on allocation were not provided with regards to concealment, only that participants were divided into the 2 groups by drawing of lots.</p>

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participants		<p>the self-reporting questionnaire. Oral clinical examinations were performed, and the parameters included were: Plaque index (PI) by recording the presence of plaque on mesial, distal, buccal and lingual surfaces after painting Diaplac on all exposed tooth surfaces (16), and the red colour was also for a pedagogic purpose. Gingival-index (GI) (17) and gingival bleeding index (GBI) (18) was recorded. Toothbrush (19) and dental floss instructions on both model and in the patient's mouth were given, and the patient practised the techniques during the visit. The information to the participants consisted of traditional education and by showing pictures of periodontal health and disease.</p> <p>All participants received a toothbrush, a roll of floss and professional tooth cleaning at the first visit for the same basic conditions. After 3 weeks, the participants returned for oral clinical re-examination. They all answered the same self-reported questionnaire, and PI, GI and GBI was registered again. The 4 participants cooperated of their own free will and were informed that they could interrupt the participation at any time. [p 179, para.6]</p> <p><b>How often:</b> The pilot study included</p>		<p>The self-reported questionnaire for the control groups showed no difference between the 2 visits, and oral care habits were unchanged (Table 3). However, in the CBT group, the questionnaire showed increased knowledge about gingivitis and the oral health care changed between the 2 visits. They reported that their oral health increased, and they had no more bleeding from the gingiva, and dental flossing had become a daily routine for them (Table 4). At the examination visit, the participants in the CBT group also answered a questionnaire about the CBT diary (Table 5). The answers in CBT group showed different strategies in how they used the diary for support.</p>	<p>No p-values were provided for main effects or differences, so whether the stated differences were significant or not is unclear.</p> <p>3 weeks is a particularly short time period to see significant differences in clinical outcomes, as the authors state, further investigation is needed with a full RCT.</p> <p>Also, the study does not state who delivered the intervention. CBT may have been delivered by a specialist - it might not be something that a dentist would be able to deliver without training. There was no reference to the validity of the self-reported questionnaire; using</p>

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		<p>2 visits with 3 weeks of interval.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 4</b>  <b>Intervention group N = 2</b>  <b>Control Group N = 2</b></p> <p><b>Baseline comparisons: NR</b> [this was a pilot study with only 4 participants]</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b> [this was a pilot study with only 4 participants]</p>		<p>Keeping the diary had helped them in increasing their motivation and awareness about oral habits and gingivitis and recommends the method as a tool in changing behaviour for better oral health. Comments to the questions about the diary among others were: “It was hard to do because I had to think about what I was feeling and why, when I brushed my teeth”. “I thought it was easy because I only used the diary as a support the days it was hard to motivate myself to brush and floss”. [p 180, paras 2 and 3 – please refer to tables for further details if necessary]</p> <p><b>No p-values provided</b></p> <p><b>Attrition details:</b> Indicate the number lost to follow up and</p>	<p>a validated measure could provide more robust results.</p> <p><b>Evidence gaps:</b> This pilot study can present material for discussion where future studies in this rarely unknown field are needed. Furthermore, as a suggestion, randomised clinical trials are needed for evidence in the effectiveness of CBT on oral health improvements.</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>whether the proportion lost to follow-up differed by group (i.e. intervention vs control): <b>NR</b> [This was pilot study of 4 participants]</p> <p><b>Conclusion:</b> This pilot study shows that using a modified model of CBT, by keeping a diary, resulted in increased adherence to oral hygiene and knowledge about gingivitis, compared with traditional instructions.</p>	

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<b>Author:</b> Grant, E. et al <b>Year:</b> 2004 <b>Citation:</b> Grant, E., G. Carlson, and M. Cullen-Erickson, Oral health for people with intellectual disability and high support needs: Positive outcomes. Special Care in Dentistry, 2004. 24(2): p.70-79. <b>Country of study:</b> Australia <b>Quality Score (++, +, or -):</b> +	<b>Study design:</b> A phenomenological research design was selected to investigate positive oral health outcomes because it enabled the generation of detailed data about participant experiences. 10 semi-structured interviews conducted with key players supporting the oral health of 4 people with disabilities.  <b>Research aims, objectives, and questions:</b> The study explored and documented 4 situations in which positive oral health outcomes occurred for people with mental retardation and moderate to high support needs.  <b>Theoretical approach [grounded theory, IPA etc]:</b> Based on phenomenological approaches  <b>State how data were collected:</b> <b>What method(s):</b> Semi structured interviews. One researcher (author EG) collected data from the participants using semi	<b>Population the sample was recruited from:</b> The study focussed on positive oral health outcomes achieved with 4 people with intellectual disability who required 24 hour support from a disability care service. At the time of the intervention, these individuals were living in a supported, community-based accommodation in an urban setting in Queensland, Australia. The subjects had limited verbal communication abilities and were unable to provide informed consent, therefore key players were interviews – including dental professionals, direct-support workers, and other professionals who worked with people who had disabilities (p.71, pa.11)  <b>How sample was recruited:</b> Situations involving a positive oral health outcome for a person with intellectual disability were	<b>Brief description of method and process of analysis [including analytic and data collection technique]:</b>  Following each interview, tapes, and field notes were transcribed verbatim. Inductive thematic analysis was used to organise the transcribed information from three interviews into categories and subcategories based on experiences at the dental office and experiences at home. A coding tree was developed and used to code the remaining transcripts. This process was facilitated by the computer program Nvivo. Data coded at each thematic category was then synthesised and summarised.  <b>Rigor:</b> coding checks were undertaken (by second and third researcher); participants provided with transcript and summary of results to check.  <b>Key themes and findings relevant to this review [with illustrative quotes if available]</b>  Perceptions of positive outcomes:  The support worker participants and dental professionals had different perceptions of what constitutes a positive oral health outcome: dentists = high standard of oral health; support worker = acceptance of intervention by person with disability. Depends on the person's relationship with	<b>Limitations identified by author:</b>  The present study relied on participants recalling situations that occurred both recently and a number of years previously. This has the potential for participants to recall information inaccurately. However, by exploring the experiences and perspectives of more than one of the key players involved in the oral health intervention, individual accounts could be compared and confirmed.  Small numbers of situations described limits our ability to generalise these findings to other settings. (However, the in-depth nature of this qualitative research would enable direct support workers, disability professionals, and dental professionals to identify similarities between the experiences of the people with intellectual disability in the present study and individuals whom they support.)  <b>Limitations identified by review team:</b>

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	<p>structured interviews. An interview guide and questions were developed, based on the literature review, and the researchers' experiences and reflections on the research objectives and questions. This enabled the interviewer to focus on specific issues related to the topic while still retaining flexibility within the interview.'</p> <p>The length of the interviews varied, max length was 1 hour.</p> <p>Interviews were recorded onto an audio-tape, with the participant's consent. One participant requested a telephone interview, and the researcher documented this participant's responses by making extensive written notes.</p> <p><b>By whom:</b> One researcher (author of paper)</p> <p><b>What setting:</b> NR</p> <p><b>When:</b> NR</p>	<p>identified by 2 methods, convenience and snowball sampling. Through her work in the disability service, one researcher (author MC-E) was able to identify 4 situations in which positive oral health outcomes had occurred. In addition, participants involved in the initial interviews for each situation were asked if they were able to identify other individuals involved in the successful oral health intervention (p.71, para.11).</p> <p>Following informal discussion between the third researcher (author MCE), unit managers, and direct support workers at the disability service, the first researcher (author EG) was provided with the names and contact details of an initial contact person for each situation involving positive outcomes. Potential participants were contacted by telephone. They were provided with an explanation of the</p>	<p>the individual.</p> <p>Key themes:</p> <p>General strategies:</p> <ul style="list-style-type: none"> <li>- Giving it a go: identified as a strategy when using dentures.</li> <li>- Maintaining consistency: when demonstrating techniques "Probably the main success was due to the fact that the person had very consistent staff whom she trusted".</li> <li>- Facilitating positive experiences: e.g. receiving feedback, getting positive comments; linking the visit to the dentist with positive experience (e.g. going to the coffee shop after the dentist)</li> <li>- Taking as much time as needed: some felt that allowing time was necessary for a positive outcome "proceeding very slowly"</li> <li>- Respecting and encouraging choice: " whenever xxx wasn't keen on going (to the dentist) we didn't go"</li> </ul> <p>Oral health strategies used at the dentist:</p> <ul style="list-style-type: none"> <li>- Timeliness and frequency of dental appointments: participants found it was helpful to schedule appointments at regular intervals and more frequent appointments when fittings/treatment taking place.</li> <li>- Communication between dental professionals, direct support</li> </ul>	<p>Although paper highlights that the research is explained clearly to participants – role of the researcher is not outlined in paper.</p> <p>Setting of interviews not clearly described.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>Further investigation of strategies and environmental influences on oral health for people with intellectual disability is warranted. In particular, qualitative research into communication with the person with intellectual disability during oral health intervention and qualitative research about oral health experiences involving interviews with people with intellectual disability who are able to communicate should occur.</p> <p><b>Source of funding:</b> NR</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
		<p>nature of the study as well as the purpose and format of the research. Following this notification, their willingness to participate in the study was ascertained. Participants were sent the interview questions prior to the interview to allow consideration of their responses (p.72, para.4).</p> <p><b>How many participants recruited:</b> 10 key players (support worker, dental professional or other professionals) who worked with the 4 people with intellectual disability were interviewed (p.71, para.11).</p> <p><b>Sample characteristics:</b> (of the 10 key players who were interviewed):</p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Australia</p> <p><b>Occupation:</b> dental professionals, direct support workers, and</p>	<p>workers, and people with disabilities: dentists explaining tooth brushing etc to support workers was perceived beneficial, and an awareness amongst support workers of the oral health problems of the individual was beneficial. Support worked advocated on behalf of individuals. Communication contributed to the success of oral health intervention for all of the people with intellectual disability.</p> <ul style="list-style-type: none"> <li>- The dental environment: smaller, more intimate dental environment preferable. Relationship with the dentist important: "really accommodating, considerate and respectful".</li> </ul> <p>Oral health strategies used at home:</p> <ul style="list-style-type: none"> <li>- Problem solving: tailored communication to solve problems</li> <li>- Assisting the person with disability to learn skills: "We decided that it was best to go right back to the first step and that is choosing your toothbrush, learning how to use it and the step-by-step process"</li> <li>- Desensitisation: a way of gradually familiarising the person with disability with oral health procedures. To decrease fear and anxiety.</li> <li>- The home environment: consideration of the physical environment, positive feedback from the community, and a support</li> </ul>	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
		<p>other professionals (psychologist and unit managers) who cared for their 4 people with disabilities</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Sample characteristics:</b> (the 4 people with intellectual disabilities):</p> <p><b>Age:</b> 2 in their 30s and 2 in their 50s</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> intellectual disability</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Supported accommodation in urban Queensland, Australia</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p>from family members and the disability service were environmental factors identified as contributing to the positive oral health outcomes achieved with the people who had intellectual disability.</p> <p><b>Conclusions:</b></p> <p>This study explored positive oral health outcomes achieved with 4 people with intellectual disability and identified strategies, perceptions, and environmental factors that may have contributed to the success. Many of these strategies, such as those related to choice making, communication, taking as much time as needed, and teaching skills are consistent with general literature in the field of intellectual disability. However, there has been little research conducted in relation to their specific application to oral health.</p> <p>It is important for people who work with populations that have disabilities to recognise that existing general teaching and learning strategies are relevant for use in oral health. It is also important for disability services to promote the knowledge of specific oral health strategies and environmental influences among direct support workers.</p> <p>/Dentists also could implement the strategies and environmental considerations in their own practices and</p>	

<b>Study Details</b>	<b>Research Parameters</b>	<b>Population and Sample Selection</b>	<b>Outcomes and Methods of Analysis</b>	<b>Notes by Review Team</b>
			may also be in the position to promote the implementation of strategies by direct support workers in the provision of oral health care in the person's home. Disability professionals such as psychologists, occupational therapists, and speech and language pathologists also may assist direct support workers and dentists in implementing the strategies and environmental changes identified in this study.	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> R.V. Harris, Y.M. Dailey and R.S. Ireland</p> <p><b>Year:</b> 2002</p> <p><b>Citation:</b> Harris, R.V., Y.M. Dailey, and R.S. Ireland, General dental practitioner advice regarding the use of fluoride toothpaste in 2 areas with a school-based milk fluoridation programme and one without such a programme. British Dental Journal, 2002. 193(9): p. 529-33; discussion 519.</p> <p><b>Country of study:</b> England</p> <p><b>Aim of Study:</b> To describe the</p>	<p><b>Source Population(s):</b> General Dental Practitioners (GDPs) who were listed as providing NHS treatment by the appropriate Health Authority and who worked in Liverpool (n=202); the Wirral (103); and St Helens and Knowsley (114) (p.530 para 5)</p> <p>Through return of uncompleted questionnaires and telephone contact with the dental practices concerned, it transpired that only 329 general dental practitioners on the original lists were still actively engaged in NHS general dental practice in the area (167 GDPs in Liverpool, 77 in the Wirral and 85 in St Helens). (p.530 para 8)</p> <p><b>Setting:</b> Survey of</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): <b>N/A.</b> – not a controlled study</p> <p><b>Report how confounding factors were minimised:</b> The possibility of contamination - which may have occurred if a GDP in one area spoke to a colleague in another area and change their responses to the questionnaire accordingly - does not appear to have been considered.</p> <p>The potential for GDPs to say they do what is accepted practice even when they don't is recognised by the authors but no adjustments were made for this challenge to the paper's validity.</p> <p><b>Data Collection Description:</b>  <b>What was delivered:</b> A focus group of 4 GDPs was set up to discuss the research area and questionnaire design. Questionnaires were coded according to the name of each GDP on the list so that non-response could be followed-up. Second and third mailings were</p>	<p><b>Study is not an intervention so there are no outcomes as such</b></p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): In order to assess the validity and reliability of the questionnaire, a shortened version containing key questions was sent to a sample of 50 GDPs who had responded, and their response to the first and second issues of the questionnaire were compared. The data were analysed using SPSS computer software. Chi-Squared tests</p>	<p><b>Advice regarding the fluoride concentration of toothpaste to be used.</b></p> <p>Proportion giving advice:</p> <ul style="list-style-type: none"> <li>42% reported that they gave advice on the fluoride concentration of toothpaste to be used by child patients</li> <li>A further 54% said that they have this advice along with other members of the dental team</li> <li>3% said that no-one in the practice gave advice on the fluoride concentration of toothpaste</li> <li>2% reported that this was done by the hygienist, dental nurse or receptionist</li> </ul> <p>(p.530 para 10)  More information in Table 1</p> <p><b>Content of advice:</b></p> <ul style="list-style-type: none"> <li>16% of GDPs do not appear to specify the concentration of fluoride toothpaste</li> </ul>	<p><b>Limitations identified by author:</b>  It could be argued that this methodology is less than ideal as a means to gather data on reported activity since the practitioner can simply state what he feels to be the accepted practice, rather than reporting what actually takes place. However Saunders <i>et al.</i> argued that GDPs were being honest, since only a quarter said that they used a rubber dam routinely, even though its use would have been advocated to all of these practitioners at undergraduate level. (p.532 para 6)</p> <p>As well as questionnaire validity, questionnaire reliability (how consistent is the information supplied when the same</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>knowledge and practice of general dental practitioners (GDPs) working in Liverpool (where there is no milk fluoridation programme) and St Helens and Knowsley, and the Wirral (where children have fluoridated milk in schools and preschools) relating to the advice given for child patients regarding the use of fluoridated toothpaste, tablets and rinses (abstract/p.530 para.4)</p> <p><b>Study Design:</b> Cross-sectional survey of Dental practitioners</p> <p><b>Quality Score (++, +, or -):</b> -</p>	<p>GDPs</p> <p><b>Location</b> (urban or rural): Liverpool; St Helens and Knowsley; and the Wirral (abstract) – urban areas with partial exception of the Wirral</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Male=74% (173); Female= 26% (61) (p.530 para.9)</p> <p><b>Sexual orientation:</b></p> <p><b>Disability:</b></p> <p><b>Ethnicity:</b></p> <p><b>Religion:</b></p> <p><b>Place of residence:</b> NR (for place of work see totals for different areas in next column)</p> <p><b>Occupation:</b> GDP</p> <p><b>Education:</b> Qualified Dentists</p> <p><b>Socioeconomic position:</b> N/A.</p> <p><b>Social capital:</b> NR</p> <p>Demographic details are representative with respect to gender of GDPs across the</p>	<p>carried out as well as telephone calls to prompt non-responders. (p.530 paras 5-6)</p> <p><b>Theoretical basis:</b> An important part of preventive dental care for families with young children is the use of fluoride and fluoridated toothpaste, tablets or rinses which may play a role in the prevention of caries. However there has been an increasing awareness of the risk of developing enamel opacities through too high a fluoride intake during tooth development. This has to be balance against the obvious benefits that occur in the reduction of dental carries. (p.529 para.1)</p> <p><b>By whom:</b> GDPs</p> <p><b>To whom:</b> GDPs</p> <p><b>How delivered:</b> Postal questionnaire</p> <p><b>When/where:</b> Questionnaires issued between January 2001 and July 2001 (p.530 para.6)</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> 7 month questionnaire</p> <p><b>Sample size:</b></p> <p><b>Total sample N =</b> 234 (response rate= 71%)</p> <p><b>Liverpool N =</b> 102</p> <p><b>The Wirral N =</b> 78</p> <p><b>St Helens and Knowsley N=</b> 54</p>	<p>and Kappa tests were carried out where appropriate. (p.530 paras 7-8)</p> <p>36 GDPs returned the shortened questionnaire. There was substantial agreement (Kappa= 0.78) for the question “Are there any schools in your area where children receive fluoride milk?” and also substantial agreement (Kappa= 0.61) for the question about the questions GDPs asked of children and their parents when giving preventive advice. There was fair agreement (Kappa=0.21) when GDPs were asked about the advice they gave on the amount of toothpaste to use. (p.532 para.4)</p>	<p>used – some of the comments indicated a lack of awareness of different concentrations</p> <ul style="list-style-type: none"> <li>For caries free children under 7 years only 64%b (144) of GDPs gave the correct advice to use a low fluoride toothpaste in line with clinical guidelines</li> <li>Over a quarter of GDPs (28%, 64) also advised children of this age with high caries to use low fluoride toothpaste.</li> <li>The proportion of GDPs giving the accepted advice to be used for caries-free children under 7 years of age was compared between districts with a milk fluoridisation programme (63%, 79) and the one without (64%, 65) but no association was found (<math>\chi^2=0.032</math>, <math>P&gt;0.05</math>) (p.531 paras 1-2) See Table 2 for additional</li> </ul>	<p>measurement is performed more than once) should be considered. When key points of the questionnaire were reissued to a subset of GDPs to test reliability, it was found that some practitioners who had said that there were no schools in their area where children received fluoride milk, changed their reply to ‘yes’ when given the questionnaire a second time. It is possible that the issue of the first questionnaire may have prompted the GDP to make some enquiries about any fluoridated milk programme in the area. (p.532 para.8)</p> <p><b>Limitations identified by review team:</b></p> <p>The eligible and source populations</p>

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<b>External Validity</b> (++, +, or -): ++	<p>country with 79% of males on the GDC register and 21% females. (p.532 para.9)</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): All GPs in source population – see above</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> N/A.</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> 31 GPs were listed as working in more than one area and 12 of the listed GPs were working in practices restricted to orthodontics or oral surgery; these were excluded. (p.530)</p>	<p>(p.530 para.9)</p> <p>Eight GPs (3%) never saw any children and were therefore excluded from any further analysis. (p.530 para.9)</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): <b>N/A.</b> – not a longitudinal or experimental study</p> <p><b>Study sufficiently powered</b> (power calculations and provide details):</p>	<p>For the questions on 'advice regarding the fluoride concentration of toothpaste to be used' and 'advice regarding the amount of toothpaste to be used' dentists were given 6 scenarios involving child patients and were asked whether they would advise a low fluoride toothpaste (&lt;600 ppm), standard fluoride toothpaste (1,000 ppm) or high fluoride toothpaste (about 1,500 ppm). The 6 scenarios were a) for caries free children under 7 years, b) for high caries children under 7 years, c) for caries-free children with mixed dentitions, d) for high caries children with mixed</p>	<p>data</p> <p><b>Advice regarding the amount of toothpaste to be used</b></p> <ul style="list-style-type: none"> <li>For children under 7 years of age 20 (9%) of GPs did not specify the amount of toothpaste which should be used when advising the patient and their parent</li> <li>56-75% described the amount of toothpaste they advised as pea-sized</li> <li>5-8% described the amount they advised as a smear</li> <li>9-21% advised that a small amount should be used.</li> <li>When comparing the amount advised to children under 7 – significant differences were seen both for children who were caries free (<math>\chi^2=18.86</math> <math>p&lt;0.01</math>) and for those with high caries (<math>\chi^2=11.23</math>, <math>p&lt;0.05</math>)</li> </ul>	<p>are almost the same. A few GPs were excluded due to location, specialism or (in terms of responses) because they did not work with children but this is not many. There is some ambiguity over whether the study authors are claiming the study is representative of the whole UK. The study authors note that the gender composition of interviewees reflects that of the country at large but this is either unnecessary to point out (as the study is just representative of the areas covered) or inadequate (as the study would need to be undertaken in other areas in some form of cluster sample for it to be nationally representative).</p> <p>The response rate</p>

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	<p>para.5)</p> <p><b>% of selected individuals agreed to participate:</b> 71% response rate</p> <p><b>Potential sources of bias:</b></p>		<p>dentitions, e) for caries-free children with a full permanent dentition and f) for high caries children with a full permanent dentition (p.530 para.11).</p>	<ul style="list-style-type: none"> <li>• Fewer GPs specified a pea-sized amount for older children and more did not specify an amount</li> </ul> <p><b>Other advice related to toothpaste usage</b></p> <p>The majority of GPs reported advising that toothbrushing should be supervised, particularly for children under 7 years of age, either for those with high caries (97%, 219 GPs) or caries free (85%, 193 GPs), Table 4. Many GPs (81%, 183) still advised supervision for those with high caries in the mixed dentition. Over half the GPs advised spitting out after brushing for children under 7 years, both for those who were caries-free (59%, 133) and for those who had high caries (53%, 119). (p.531 para.4)</p> <p><b>Knowledge of the milk fluoridisation programme</b></p>	<p>was 71% so it is likely the selected participants are representative. However no information is given on whether there were any differences between non-respondents and respondents.</p> <p>Reliability was tested using Kappa coefficients. Of the 3 questions mentioned substantial agreement was found for 2 of them and fair agreement for the remaining question. The study authors note potential limitations concerning the study's validity as GPs might simply state what he/she feels is the accepted practice rather than what actually goes on.</p> <p>As mentioned, the focus was not on explanation as such.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<ul style="list-style-type: none"> <li>Of the 226 GPs responding who saw child patients regularly in their practice, 101 worked in Liverpool where there is no programme and 125 worked in either the Wirral or St Helens and Knowsley where children receive fluoride milk.</li> <li>When asked if there were any schools in their area where children receive fluoridated milk, 78% (97) of GPs in the Wirral and St Helens replied there was, with the remainder replying either 'No' (2%, 3) or 'Don't know (20%, 25).</li> <li>In Liverpool (where there is no milk fluoridation programme) 91% (92) said either that there was no milk fluoridation or that they did not know.</li> <li>Nine dentists in Liverpool said that there was a milk</li> </ul>	<p>However in some cases - the amount of toothpaste advised (p.531 para.2) - multiple explanatory variables were considered including gender and years of qualification alongside presence or absence of a milk fluoridation programme.</p> <p>The analytical methods seem appropriate given the study was descriptive in nature. While the article acknowledges that levels of awareness by GPs of the milk fluoridation programme may affected their responses it might have been useful to have some statistical measures which controlled for this. Only p values were given.</p> <p><b>Evidence gaps:</b> Alternative ways of</p>

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				<p>fluoridation programme in schools in their area (p. 531 (para.5) and p.532 (para.1))</p> <p>In terms of whether the existence of the milk fluoridisation scheme featured in any discussion on fluoride toothpaste:</p> <ul style="list-style-type: none"> <li>• There was no difference between the proportions of GPs in areas with a milk fluoridation programme (59%) and GPs in Liverpool (53% (<math>\chi^2=1.03</math>, <math>p&gt;0.05</math>)). (p.532 para.2)</li> <li>• 59% (74) of GPs working in the Wirral or St Helens and Knowsley claimed they asked routinely asked if the child had fluoride milk at school compared with 7% (7) in Liverpool (<math>\chi^2=66.37</math>, <math>P&lt;0.001</math>). The 7 dentists in Liverpool corresponded with those dentists who</li> </ul>	<p>collecting activity data such as checking dental records and payment schedules can be used to try to validate self-reported activity. However, these methods in themselves give insufficient detail in relation to the rationale behind the practitioners' choice of treatment. In the case of preventive advice, validation could only really be achieved through observing the GP at work. This perhaps could be undertaken as a further study. (p.532 para.7)</p> <p><b>Source of funding:</b></p>

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				<p>mistakenly thought schools in their area gave out fluoride milk. (p.532 para.2)</p> <ul style="list-style-type: none"> <li>63% (79) of GPs in the Wirral and St Helens and Knowsley said that they advised a low fluoride toothpaste for caries free children under the age of 7, compared with 64% (65) of GPs in Liverpool, (<math>\chi^2=0.032, P&gt;0.05</math>). (p.532 para.3)</li> <li>38% (48) of Wirral and St Helens and Knowsley GPs said that they advised a standard fluoride toothpaste for high caries children under 7 years of age, compared with 39% (39) of Liverpool GPs who gave this advice for high caries children of this age (<math>\chi^2=0.01, P&gt;0.05</math>). (p.532 para.3)</li> </ul> <p><b>Attrition details:</b> Indicate the number lost to</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p><b>N/A.</b> (not a longitudinal survey)</p> <p><b>Conclusion:</b> There are clear clinical guidelines regarding the advice that should be given concerning the use of fluoride toothpaste by young children. It appears that although many GPs give advice that concurs with the guidelines, there are a significant number who either do not discuss the subject fully with the parent concerned (for example by not specifying the concentration of paste to be used), or give advice which contradicts the guidelines (for example by advising caries free children under 7 years of age to use a medium or high fluoride toothpaste). For evidence-based dentistry to become a reality in this area, ways must be found to disseminate the available</p>	

<b>Study details</b>	<b>Population and setting</b>	<b>Method of allocation to intervention/control</b>	<b>Outcome definitions and method of analysis</b>	<b>Results</b>	<b>Notes by review team</b>
				guidelines more fully and increase their acceptance and use by practitioners. (p.533 para.3)	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> Hausen, H., et al. <b>Year:</b> 2007 <b>Citation:</b> Hausen, H., et al. Noninvasive control of dental caries in children with active initial lesions. A randomised clinical trial. <i>Caries research</i> , 2007. 41, 384-91 <b>Country of study:</b> Finland <b>Aim of Study:</b> The aim of this study was to investigate whether DMFS increment can be decreased among children with active initial caries by oral hygiene and dietary counselling and by using non-invasive clinical measures of caries control. <b>Study Design:</b> Parallel RCT	<b>Source Population(s):</b> All 5th and 6th graders (11- and 12-year-olds) in the town of Pori, Finland, who started the 2001–2002 school year, except for mentally disabled and handicapped children attending special schools (n = 1,691). Of the 1691, 577 were eligible to participate and randomised. <b>Setting:</b> Public dental clinics in Pori, Finland <b>Location (urban or rural):</b> Pori, Finland (NR) <b>Sample characteristics:</b> <b>Age:</b> 11 and 12 year olds. Mean age was 11.9 years <b>Sex:</b> NR <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> Children were given	<b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> The children attending this examination were divided randomly into two groups using computer-generated random numbers. <b>Report how confounding factors were minimised:</b> NR <b>Programme/Intervention description:</b> <b>What was delivered:</b> Oral hygiene and dietary counselling: for each child the content of the intervention was based on his/her individual needs according to the clinical findings, a questionnaire and conversations during sessions. The dental hygienist and the child discussed ways of reversing the active lesion and preventing the onset of new lesions. The child was encouraged to take responsibility for his/her own dental health with the support of dental personnel.	<b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated): <b>Outcome name:</b> DMFS values <b>Outcome definition:</b> DMFS increments over time <b>Outcome measure:</b> Exam <b>Outcome measure validated:</b> NR <b>Unit of measurement:</b> Mean DMFS increments <b>Time points measured:</b> Difference between start and middle (2001-2003) and start and end (2001-2005) <b>Means, SDs, p-values, CIs, Effect sizes, SEs</b> <b>Oral health (clinical) results:</b> <b>Outcome name:</b> Visible plaque <b>Outcome definition:</b> Index tooth surfaces with visible plaque <b>Outcome measure:</b> Exam <b>Outcome measure validated:</b> NR	For each outcome report Total sample: Baseline: Follow up (all time points) End point: Intervention group(s): Baseline Follow up (all time points) End point Control group(s) Baseline Follow up (all time points) End point <b>Intervention group:</b> <b>Baseline to mid-point:</b> 1.86 (1.50,	<b>Limitations identified by author:</b> NR <b>Limitations identified by review team:</b> The setting does not reflect a usual UK dental practice as it is in Finland. Power calculation not reported <b>Evidence gaps:</b> Costs were not considered in the current study, but a further challenge will be to design a regimen that is not only efficacious but also cost-effective. <b>Source of funding:</b> NR

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<p>The children attending this examination were divided randomly into 2 groups using computer-generated random numbers.</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity</b>(++, +, or -): +</p>	<p>Pori, Finland</p> <p><b>Occupation:</b> School children</p> <p><b>Education:</b> 5<sup>th</sup> and 6<sup>th</sup> graders</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population:</b> All 5<sup>th</sup> and 6<sup>th</sup> graders in the town invited (except for mentally disabled and handicapped children attending special schools).</p> <p>93% of the children attended the baseline screening appointment at which they were screened for the presence of active initial caries lesions. Children with at least one active lesion were given an informed consent form to be taken home for their parents' signature. Those for whom consent was obtained were invited for a baseline dental examination. 577 of</p>	<p>toothbrushes, fluoride toothpaste and fluoride lozenges throughout the study period.</p> <p>Active initial caries lesions were cleaned professionally and treatment was applied twice at an interval of 1-2 weeks. This was repeated until the lesion seemed to be reversed.</p> <p>Throughout the study period, the dental hygienists (who gave the counselling) were given caching and support and their work was monitored regularly.</p> <p>Children in the experimental and control groups were, along with their peers in Pori, equally exposed to community level promotion of oral health that was implemented during the course of the randomised controlled trial. This involved providing correct information on oral health problems and their prevention, i.e. avoiding frequent snacking, brushing twice a day with fluoride toothpaste and using xylitol after meals (information included in the counselling of the experimental group)</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Counselling = Dental</p>	<p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Baseline (2001) and End (2005)</p> <p><b>Outcome name:</b> Gingival bleeding</p> <p><b>Outcome definition:</b> Gingival bleeding scores</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Scores 2-3 (Loe 1967)</p> <p><b>Time points measured:</b> Baseline (2001) and End (2005)</p> <p><b>Other outcomes:</b> dietary habits and tooth brushing frequency. Use of xylitol lozenges and chewing gum and fluoride lozenges (Full data not shown in paper).</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> NR</p> <p><b>Time points</b></p>	<p>2.21), n = 242</p> <p><b>Baseline to end point:</b> 2.56 (2.07, 3.05) n = 250</p> <p><b>Control group:</b></p> <p><b>Baseline to mid-point:</b> 2.44 (2.12, 2.77) n = 251</p> <p><b>Baseline to end point:</b> 4.60 (3.99, 5.21) n = 247</p> <p><b>Difference (between intervention and control group):</b></p> <p><b>Baseline to mid-point:</b> 0.59 (1.07, 0.11) p value 0.0164</p> <p><b>Baseline to end point:</b> 2.04 (2.82, 1.26) p value &lt;0.0001</p> <p><b>Visible Plaque Mean (95% CI):</b></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 7.6 (6.1, 9.1) n = 250</p> <p><b>End point:</b> 6.7 (4.8, 8.6) n = 250</p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 7.6 (5.9, 9.3) n = 247</p> <p><b>End point:</b> 7.4 (5.3,</p>	

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	<p>the initial 1691 were eligible and were randomised.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b></p> <p><b>Inclusion Criteria:</b> (as above)</p> <p><b>Exclusion Criteria:</b> Mentally disabled and handicapped children attending special schools</p> <p><b>% of selected individuals agreed to participate:</b> 93% (1691). Of those 577 were eligible.</p> <p><b>Potential sources of bias:</b> NR</p>	<p>hygienist. One experienced health dentist examined the children's teeth. She had been carefully trained for the examination and did not participate in the dental care of the children.</p> <p><b>To whom:</b> Patients – children aged 11-12</p> <p><b>How delivered:</b> Counselling, instructions, cleaning, materials (toothpaste, lozenges)</p> <p><b>When/where:</b> Public dental clinics in Pori, Finland</p> <p><b>How often:</b> After 2 years and at the end of the study the children were examined using the same methods as at the baseline examination.</p> <p><b>How long for:</b> In both groups, the average follow-up period was 3.4 years (95% CI 3.42, 3.43 in both groups).</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Dentists were responsible for all dental care of the children in the control group. Measures for caries control were those given normally in the public dental clinics of Pori. In principle, this included applications of fluoride varnish and health education on</p>	<p><b>measured:</b> Baseline (2001) and end of follow-up (2005)</p> <p><b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b></p> <p>ITT - NR</p> <p>To compare the group-specific cross-sectional DMFS values, 3.4-year DMFS increments and percentages of index tooth sites with visible plaque and gingival bleeding, mean values and their</p> <p>95% confidence intervals were calculated. The mean difference in the DMFS increment between experimental and control group and its 95% confidence intervals were also calculated. This difference was also expressed by means of</p>	<p>9.4) n = 247</p> <p><b>Start point p value (intervention and control):</b> 0.9938</p> <p><b>End point p value (intervention and control):</b> 0.6457</p> <p><i>Gingival bleeding</i> Mean (95% CI):</p> <p><b>Intervention group(s):</b> <b>Baseline:</b> 13.5 (11.3, 15.7)</p> <p><b>End point:</b> 15.4 (12.8, 18.1) n = 250</p> <p><b>Control group(s)</b> <b>Baseline:</b> 11.5 (9.5, 13.5)</p> <p><b>End point:</b> 19.1 (15.9, 22.2) n = 247</p> <p><b>Start point p value (intervention and control):</b> 0.1861</p> <p><b>End point p value (intervention and control):</b> 0.0824</p> <p><b>Behavioural results:</b></p> <p>Dietary habits and tooth brushing</p>	

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		<p>dietary and oral hygiene habits. The study protocol included no guidelines regarding the self-care of children in the control group.</p> <p>Children in the experimental and control groups were, along with their peers in Pori, equally exposed to community level promotion of oral health that was implemented during the course of the randomised controlled trial. This involved providing correct information on oral health problems and their prevention, i.e. avoiding frequent snacking, brushing twice a day with fluoride toothpaste and using xylitol after meals</p> <p><b>By whom:</b> Dentists were responsible for the dental care of all the children in the control group.</p> <p>One experienced health dentist examined the children's teeth. She had been carefully trained for the examination and did not participate in the dental care of the children.</p> <p><b>To whom:</b> Patients – children aged 11-12</p> <p><b>How delivered:</b> Normal dental care, oral health education</p> <p><b>When/where:</b> Public dental</p>	<p>the prevented fraction; t tests for independent samples were used to evaluate the statistical significance of differences in the mean values. The significance of differences in oral health habits was evaluated by means of chisquare tests.</p>	<p>frequency. Use of xylitol lozenges and chewing gum and fluoride lozenges (Full data not shown in paper).</p> <p><b>Only reported results:</b> Based on the questionnaires, at baseline there were no statistically significant differences in dietary habits or toothbrushing frequency between the experimental and control groups. At the end of the follow-up, children in the experimental group reported using xylitol lozenges and chewing gum and fluoride lozenges significantly more frequently than those in the control group. Other differences in dietary habits were slight and non significant, nor was there a significant difference in reported toothbrushing frequency between the groups at the end of the follow-up. (p.389 para.2)</p>	

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		<p>clinics in Pori, Finland</p> <p><b>How often:</b> After 2 years and at the end of the study the children were examined using the same methods as at the baseline examination.</p> <p><b>How long for:</b> In both groups, the average follow-up period was 3.4 years (95% CI 3.42, 3.43 in both groups).</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 577</b>  <b>Intervention group N = 278</b>  <b>Control Group N = 282</b></p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b> No difference in mean age between the children in the experimental and control groups or between those who completed the study and those who were lost to follow-up. There was no significant difference in the mean baseline DMFS values between the experimental and control groups. In both groups, the baseline DMFS values for the dropouts were higher than those for the participants who completed the study, but the differences were not statistically</p>		<p><b>Attrition details:</b>  <b>Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</b></p> <p>After randomisation:</p> <p>8 lost in experimental group, 7 lost in control group</p> <p>After first exam:</p> <p>16 lost in experimental group, 15 lost in control group</p> <p>After second exam:</p> <p>12 lost in experimental group, 20 lost in control group</p> <p>21 in experimental group missed the second exam, and 15 in the control group missed the second exam.</p>	

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		<p>significant.</p> <p><b>Study sufficiently powered (power calculations and provide details):</b> NR</p>		<p><b>Conclusion:</b> In the present study, the children in the experimental group had significantly smaller mean caries increment than those in the control group, the preventive fraction being 44.3%.</p> <p>However, a huge effort was made to achieve the result. In the follow-up period, during visits to dental hygienists, the children in the experimental group received on average 11.4 applications of fluoride varnish or a mixture of fluoride and chlorhexidine varnishes, which was over 7 times more than the mean number of fluoride varnish applications in the control group. Counselling sessions were over 3 times more frequent in the experimental than in the control group. Xylitol and fluoride</p>	

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				<p>lozenges were distributed free of charge to the children in the experimental group. In addition, children in the experimental group were, like all other children in Pori, exposed to a community-level program of oral health promotion that continued throughout the study.</p> <p>In spite of intention to control harmful snacking among the children in the experimental group, no difference between the experimental and control groups was found in any of the self-reported dietary habits, except for the use of xylitol products, at the end of the follow-up. This disappointing result indicates that it is difficult to influence established dietary habits. The difference between groups in the use of xylitol and</p>	

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				<p>fluoride lozenges was expected since they were given free of charge to the children in the experimental group. Nor was there a significant difference between the groups in the self-reported frequency of toothbrushing. At the end of the follow-up, however, the mean percentages of index sites with visible plaque and gingival bleeding were slightly lower in the experimental than in the control group, but the differences were not statistically significant.</p> <p>According to our results, a regimen that includes multiple measures for controlling dental caries can significantly reduce increment in dental decay among caries-active children living in an area where the overall level of caries experience is low. Costs were not</p>	

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				considered in the current study, but a further challenge will be to design a regimen that is not only efficacious but also cost-effective.	

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<p><b>Author:</b> Holloway, P.J. and Clarkson, J. E.</p> <p><b>Year:</b> 1994</p> <p><b>Citation:</b> Holloway, P.J. and Clarkson, J.E. (1994) Cost: benefit of prevention in practice, International Dental Journal, 44, 317-322.</p> <p><b>Country of study:</b> North-west England</p> <p><b>Quality Score (++, +, or -)</b> ++</p>	<p><b>Study design:</b> The study was conducted in 2 parts; a quantitative investigation and a qualitative enquiry. (p.318, para.8).</p> <p><b>Research aims, objectives, and questions:</b> A study was conducted of the views of established, successful, general dental practitioners treating their child patients under a capitation system of remuneration, in order to discover what preventive procedures on which patients they considered were of benefit to their practices and why. (p.318, para.5).</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> NR</p> <p><b>State how data were collected:</b></p> <p><b>What method(s):</b> The quantitative study involved a telephone interview with 50 dentists, all of whom were general practitioners working in well established, successful practices. These interviews lasted for about 15 minutes requiring the dentists to give 'yes-no' answers to a series</p>	<p><b>Population the sample was recruited from:</b> Dentists from North-West England (p.318, para.8).</p> <p><b>How sample was recruited:</b> General practitioners working in well-established, successful practices in North-west England to complete the quantitative element. From these 50, 21 participated within the qualitative and then 20 participated within the follow-up questionnaire. (p.318 para. 9-10)</p> <p><b>How many participants recruited:</b> 50 dentists (p.318, para.8)</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> North-West England</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>The audiotapes were analysed to detect common responses for the adoption of various practice policies. NR what method was used to conduct this analysis. (p.318, para.9).</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>All the dentists included within the study thought that prevention in some form on selected patients was of value to the practice. The qualitative element of the study gave 4 reasons for this:</p> <ul style="list-style-type: none"> <li>• Good image for the practice. Parents approved and recommended the practice to their friends and relatives thus enhancing the reputation. One dentist did say it could be a 'loss leader'.</li> <li>• Secondly, others genuinely felt that prevention, if carried out well could be cost: effective when compared with operative dentistry.</li> <li>• Thirdly they all agreed that prevention increased job satisfaction in dentists as they</li> </ul>	<p><b>Limitations identified by author:</b> NR</p> <p><b>Limitations identified by review team:</b></p> <p>No clear justification for the research methodology has been given.</p> <p>Some information is provided on data collection, but this does not include anything on data storage. More information on the size of individual discussion groups and where they took place would have been useful.</p> <p>The relationship between the researcher and participants is not described and there is no information on how the research was introduced, even in the discussion groups.</p> <p>There is no information on how long the dentists have been qualified or what areas they come from and whether there are any differences in terms of the socio-economic characteristics of the areas</p>

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	<p>of questions about their practice policies on the matter of preventative procedures. From their answers a 'preventative awareness score' was calculated for each dentist, allowing comparisons between different dentists in different practices and communities. (p.318, para.8).</p> <p>The qualitative phase involved 4 discussion group sessions with 21 of the same dentists in an attempt to discover in more depth the reasons why they chose these practice policies. The discussions lasted for 90 minutes and were largely unstructured allowing the dentists to cover the topics that they wished within the limits of a topic guide. These were tape-recorded. (p.318, para.9).</p> <p>In addition 20 of these dentists were asked to complete a further questionnaire based on the 'standard gamble' technique in an effort to persuade them to place a definite risk upon not performing the various preventive techniques. (p.318, para.10).</p>	<p><b>Inclusion criteria:</b> Practices within the North-West of England which were well-established and successful. (p.318, para.8)</p> <p><b>Exclusion criteria: NR</b></p>	<p>prefer to see child patients free from dental caries rather than having to restore their teeth as they become diseased.</p> <ul style="list-style-type: none"> <li>Finally, some dentists thought that prevention was part of modern philosophy, and that dentists were neglectful if they did not practice on their patients. (p.318, para.11-13).</li> </ul> <p>88% (44) of the dentists would prescribe fluoride supplements but mainly on a selective basis. They felt that those with no caries and whose parents controlled their children's sugar intake did not need tablets. Thus, 48% (24) restricted tablets to children below the age of 10 years with active caries and only in a comprehensive preventive regimen. Dentists were concerned that children who took the tablets and brushed regularly with fluoride toothpaste might develop fluorosis later and that might be detrimental to the practice, and therefore some dentists halved the recommended dose level in Britain before prescribing. (p.319, para. 1).</p> <p>Pit and fissure sealants were universally popular among this group 96% (48) although they were unsure of the cost: effectiveness despite the fact that several delegated this duty to the hygienists. However they were popular among dentists and parents if they felt that something positive was being done</p>	<p>they serve.</p> <p>There is no discussion on whether the methods that were used were reliable.</p> <p>Statistical tests have been undertaken but it is not clear what method was used.</p> <p>The qualitative element is not rich at all. No extracts are given and only very broad themes are provided.</p> <p>No mention on the reliability of the analysis has been mentioned, for example how many researchers coded the transcripts from the qualitative element.</p> <p>Findings from the quantitative element are clearly presented but as noted above only very broad findings are presented for the qualitative element.</p> <p>Due to it being a pilot study the further implications have not been discussed.</p> <p>Ethics have not been referred to within the report.</p>

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	<p><b>By whom:</b> NR  <b>What setting:</b> NR  <b>When:</b> NR</p>		<p>to prevent disease. Despite this few would use it routinely (26%, 13) most being selective in their application. (p.319, para. 2).</p> <p>These dentists on the whole were not confident in their ability to predict which teeth caries would develop on in the next year. Despite this 52% (26) said they would seal the fissures of any teeth which they thought would develop caries within the next year. 54% (27) said that they would be more inclined to seal the fissures of first permanent molars on eruption if they had been any caries in the primary definition, and 52% (26) would seal the remaining 3 teeth in a series if one had already presented with fissure caries. (p.319, para. 2-3).</p> <p>With regards to dietary counselling the responses were ambivalent. Only 58% (29) of dentists felt the offering of dietary counselling was of benefit to the practice, but these were very enthusiastic to the extent that they felt the obligation to offer it to most patients or the patient's parent. They felt that unless the sugar intake was controlled the rest of the preventative procedures would be to no avail. However others felt that although sugar intake is important it is very difficult to change people's eating patterns and that many parents resented being told that they were feeding their child inadequately. (p.319, para. 4).</p>	<p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>This study is a pilot study and it is planned to extend it in order to investigate the issue in a greater depth. (p.320, para. 10).</p> <p><b>Source of funding:</b> NR</p>

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			<p>Oral demonstrations were preferred by the dentists (92%, 46) and thought that it was of value to their practice; however they were not really clear about their reasoning. They felt that this was a procedure which could be easily arranged, particularly in referred to an auxiliary staff member. (p.319, para.5).</p> <p>Only 32% (16) of the dentists thought that applying topical fluoride preparations to the teeth of patients was of value to the practice. (p.319, para.6).</p> <p>Two-thirds (66%, 33) of those dentists that though recommending the daily use of fluoride mouthrinses was of some value to the practice. These were part of a preventive programme for adolescents with high caries and for patients wearing fixed appliances. (p.319, para.7).</p> <p>52% (26) of the dentists employed hygienists in their practices, many delegated to these staff members for procedures such as demonstrations, dietary counselling and topical fluoride treatments. Practices which employed hygienists had a higher preventative awareness score than those who did not (<math>p=.02</math>). (p.319, para.8).</p> <p>From the results of the 'standard gamble' exercise the most popular preventive technique over the whole age range was dietary counselling, with fissure sealants a close second and oral hygiene being</p>	

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			<p>third. Well behind these came fluoride mouthrinsing, fluoride supplements and professionally applied fluoride. (p.319, para.9).</p> <p><b>Statistical Analysis</b> Although there is mention of mean scores and p-values they do not mention which statistical test they have used. Presumably they used the <i>t</i>-test but this is not clear.</p> <p><b>Conclusions:</b> It was clear from the responses that factors other than immediate financial considerations affected their decision on whether or not to use preventative techniques. Of particular relevance was the image of their practice among communities they served, and their own job satisfaction which many valued as highly as their cash flow. (p.320, para.3).</p> <p>It was also clear that these dentists had completely different working philosophy to their peers in dental public health, as their orientations are more focussed on the dental health of each individual and consequently they are less likely to weigh the cost and benefits when the treatment under consideration are of no harm but may benefit the patient themselves. (p.320, para.4).</p> <p>Compared to dental public health workers, dental practitioners do not appear to be as concerned with</p>	

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			<p>discovering the means of predicting dental caries. (p.320, para.5).</p> <p>Fissure sealants were also popular in this group of dentists despite the immediate cost: effectiveness being unclear to them, however they were seen as good practice builders. They preferred to do sealant restorations rather than sealing over the caries. (p.320, para.6).</p> <p>The case for dietary counselling was more complex. There were 2 groups when it came to this matter, one group felt that they had a professional obligation to ensure that their patients were informed of the threat of sugar in the aetiology of dental caries to enable them to take the necessary actions in their everyday lives to avoid the disease. The other group felt that there was very little chance in being able to change the individuals eating habits. (p.320, para.7).</p>	

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<p><b>Author:</b> Anders Hugoson, Dan Lundgren, Babro Asklow and Gun Borglint</p> <p><b>Year:</b> 2003 and 2007</p> <p><b>Citation:</b> Hugoson, A., et al., Effect of 3 different dental health preventive programmes on young adult individuals: a randomised, blinded, parallel group, controlled evaluation of oral hygiene behaviour on plaque and gingivitis. Journal of Clinical Periodontology, 2007. 34(5): p. 407-15. (Paper One)</p> <p>Hugoson, A., et al., The effect of different dental health programmes on young adult</p>	<p><b>Source Population(s):</b> Individuals aged 20-27 recruited from 2 clinics – a Large Public Dental Service (PDS) clinic, and from a private two-dentist practice in Jonkoping, a city in southern Sweden with approximately 120,000 inhabitants.</p> <p><b>Setting:</b> A Large Public Dental Service (PDS) clinic, and a private two-dentist practice in Jonkoping, a city in southern Sweden with approximately 120,000 inhabitants. The recruiting area of the PDS clinic comprised patients from both urban and rural areas</p> <p><b>Location (urban or rural):</b> The</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): No information is provided on how randomisation was achieved apart from that it was carried-out by one of the authors.</p> <p><b>Report how confounding factors were minimised:</b> The allocation was not concealed but the Dental Hygienist who carried out the baseline examination of the patients and who also examined the patients annually was blinded to group assignment and to the particular programmes the patients were following. Contamination was not explicitly discussed and given that some of the participants in different groups probably went to the same clinics it is possible. However the focus of the study is on different modes of delivery rather than different messages so it would be difficult to replicate such experiences. Consequently contamination is likely to be low. Demographic imbalances at baseline were not stated</p> <p>NOTE: All study groups are</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>1) Outcome name:</b> Plaque levels</p> <p><b>Outcome definition:</b> Full mouth number of tooth surfaces with plaque and proximal number of tooth surfaces with plaque</p> <p><b>Outcome measure:</b> Number of tooth surfaces – mean numbers taken for reporting purposes</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Number of surfaces</p> <p><b>Time points measured:</b> Baseline, 1 year, 2 year and 3 year</p> <p><b>2) Outcome name:</b> Gingivitis levels</p> <p><b>Outcome definition:</b> Full mouth number of sites with gingivitis and proximal number of sites with gingivitis</p>	<p><b>Oral health (clinical) results:</b></p> <p><b>1) Plaque Levels:</b></p> <p>Mean scores (with standard deviations in brackets)</p> <p>Group 1<sub>1</sub> (Control): Full mouth – Baseline: 54.3 (21.9) Full mouth - End point (3 years): 37.6 (24.3) Proximal – Baseline: 41.6 (15.1) Proximal - End point (3 years): 30.0 (18.9)</p> <p>Group 2<sub>1</sub> (Karlstad 0): Full mouth – Baseline: 63.0 (18.7) Full mouth - End point (3 years): 12.9 (12.2) Proximal – Baseline: 47.5 (11.6) Proximal - End point (3 years): 10.4 (10.6)</p> <p>Group 2<sub>1</sub> (Karlstad 1 and 2): Full mouth – Baseline: 63.6 (17.7) Full mouth - End point (3 years): 22.1 (21.1)</p>	<p><b>Limitations identified by author:</b> No limitations reported</p> <p><b>Limitations identified by review team:</b></p> <p>There is considerable ambiguity as both papers report different drop-out rates even though they are based on the same study. The drop-outs were reported as "evenly distributed" between the groups and whichever paper is right the drop-outs are below &lt;20%. However the ambiguity is clearly a cause for alarm. In addition, Paper Two reported an additional 13.5% of drop-outs at the 5 year stage (Paper One only goes to 3 years) and 9.8% at</p>

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<p>individuals. A longitudinal evaluation of knowledge and behaviour including cost aspects. Swedish Dental Journal, 2003. 27(3): p. 115-130. (Paper Two)</p> <p><b>Country of study:</b> Sweden</p> <p><b>Aim of Study:</b> Paper One: To evaluate, in young adults, the effect of different preventive programmes on oral hygiene and to determine whether the variables investigated are predictors of gingival health.</p> <p>Paper Two: The goal of this study was to report the long-term effect of different dental health programmes on young adult</p>	<p>recruiting area of the PDS clinic comprised patients from both urban and rural areas.</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 20-27  <b>Sex:</b> 211 men and 189 women  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> NR  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR    <b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Individuals were</p>	<p>numbered on the basis of the numbering system used in Paper Two as this included all 8 study groups. Sub-divisions of the Karlstad group, which are numbered in Paper One as "2<sub>0</sub>" and "Two<sub>1</sub>" etc are numbered here as "Karlstad 0", "Karlstad 1" etc so as to avoid confusion with the second set of study groups that appear only in Paper Two.</p> <p><b>First set of study groups (first 3 years, Papers One and Two):</b></p> <p><b>Control Group 1:</b>  <b>What was delivered:</b> The individuals in this group underwent no organised prophylactic measures for caries gingivitis/periodontitis within the framework of the study but had to answer a questionnaire about knowledge of dental diseases and oral hygiene behaviour. The subjects were recalled at 12-month intervals for follow-up examinations, identical to the baseline examination, over the next 3 years</p> <p><b>By whom:</b> Dental Hygienist  <b>To whom:</b> 100 patients  <b>How delivered:</b> N/A.  <b>When/where:</b> Dental clinic  <b>How often:</b> Follow-up every 12 months</p>	<p><b>Outcome measure:</b> Number of sites – mean numbers taken for reporting purposes  <b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Number of sites</p> <p><b>Time points measured:</b> Baseline, 1 year, 2 year and 3 year</p> <p><b>3) Outcome name:</b> Knowledge of the 2 most common dental diseases  <b>Outcome definition:</b> What are the 2 most common diseases that affect the teeth? (Open question) The answer was considered correct only when both caries and gingivitis/periodontitis were named.</p> <p><b>Outcome measure:</b> Patient reported  <b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Open question – coded as correct or incorrect</p> <p><b>Time points measured:</b></p>	<p>Proximal – Baseline: 47.8 (11.5)  Proximal - End point (3 years): 18.4 (18.3)</p> <p>Group 3<sub>1</sub> (Individual Educational):  Full mouth – Baseline: 60.7 (22.8)  Full mouth - End point (3 years): 24.5 (23.6)  Proximal – Baseline: 45.0 (14.0)  Proximal - End point (3 years): 20.2 (19.8)</p> <p>Group 4<sub>1</sub> (Group Education):  Full mouth – Baseline: 59.2 (23.1)  Full mouth - End point (3 years): 21.6 (20.9)  Proximal – Baseline: 44.5 (15.0)  Proximal - End point (3 years): 16.5 (15.3)</p> <p>Full mouth:  After 3 years the presence of plaque decreased (<math>p&lt;0.05</math>). Group 1<sub>1</sub> had more plaque (<math>p&lt;0.05</math>) than the test groups. The differences between the</p>	<p>the 10 year stage - altogether this clearly surpasses the 20% level.</p> <p>Information on location, population and urban/rural split but no demographic breakdown of the area. It would have been useful to know how many 20-27 year olds there were</p> <p>Outcome measures in Paper One were clinical. The outcomes in Paper Two were patient reported and no test appeared to have been made for reliability.</p> <p>There is a lack of information on the results of a question on dental cleaning aids. Other than that all outcomes seem to have been reported.</p>

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<p>individuals' knowledge and behaviour relative to oral health.</p> <p><b>Study Design:</b> Randomised, blinded, parallel, controlled clinical study</p> <p><b>Quality Score (++, +, or -): +</b> However inconsistency in drop-out rates between Papers One and Two is a serious issue and suggests that caution should be treated when interpreting any of these results.</p> <p><b>External Validity(++, +, or -): ++</b></p>	<p>offered (via a written invitation) a dental examination free of charge and were then contacted by telephone. Patients were summoned consecutively until 200 individuals from each clinic had replied.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population: NR</b></p> <p><b>Inclusion Criteria:</b> Individual was not planning to move from Jonkoping in the next few years</p> <p><b>Exclusion Criteria: NR</b></p> <p><b>% of selected individuals agreed to participate: NR</b> – there is no data on refusals even though the</p>	<p><b>How long for:</b> 3 years</p> <p><b>Group 2, The “Karlstad Model”:</b></p> <p><b>What was delivered:</b> In this group, all individuals received prophylactic care every second month (6 times per year) according to the Karlstad model for adult individuals. At the first visit, information on caries and gingivitis/periodontitis was presented and oral hygiene instruction was given based on plaque disclosure. At the next five visits, at 2-month intervals, the individual's oral status was reviewed and, when necessary, information or oral hygiene instruction was repeated.</p> <p>Half the number of the individuals was also randomly chosen to have no other preventive measures (<b>Karlstad 0</b>). The other individuals were randomly chosen to undergo professional tooth cleaning at each visit. The cleaning was performed crosswise in 2 quadrants, which meant that the teeth in the right maxilla and the left mandible were professionally cleaned in 25 individuals (<b>Karlstad 1</b>) and in the left maxilla and the right mandible in</p>	<p>Baseline, 1 year, 3 year, 5 year and 10 years</p> <p><b>4) Outcome name:</b> Knowledge of the causes of caries</p> <p><b>Outcome definition:</b> What causes caries? (open question) The answer was considered correct when both bacteria and diet were named.</p> <p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Open question – coded as correct or incorrect</p> <p><b>Time points measured:</b> Baseline, 1 year, 3 year, 5 year and 10 years</p> <p><b>5) Outcome name:</b> Knowledge of the causes of gingivitis/periodontitis</p> <p><b>Outcome definition:</b> What causes gingivitis/periodontitis? (open question) Bacterial plaque or poor oral hygiene was considered correct.</p>	<p>test groups were statistically non-significant.</p> <p>Proximal: After 3 years: in all groups the presence of plaque decreased (<math>p&lt;0.05</math>). The difference between group Karlstad 0 and group 1<sub>1</sub> as well as between Karlstad 0 and groups Karlstad 1and2, group 3<sub>1</sub>, and 4<sub>1</sub> was statistically significant (<math>p&lt;0.05</math>). The difference between group 1<sub>1</sub> and Karlstad 1and2, group 3<sub>1</sub>, and 4<sub>1</sub> was statistically significant (<math>p&lt;0.05</math>). The difference between group Karlstad 1and2, group 3<sub>1</sub>, and 4<sub>1</sub> was statistically non-significant.</p> <p><b>2) Gingivitis Levels:</b></p> <p>Mean scores (with standard deviations in brackets)</p> <p>Group 1<sub>1</sub> (Control): Full mouth – Baseline: 33.2 (19.5) Full mouth - End point (3</p>	<p>Power was not stated and the effect size was not given. No confidence intervals were reported in Paper One. P values were reported in both papers.</p> <p>Sex and smoking habits were controlled for in Paper One's logistic regression model but because demographic characteristics are not given it isn't clear whether any other variables (such as education) should have been included.</p> <p>Participants dropped-out in different years and it isn't clear how this was dealt with in the analysis which is a flaw particularly when looking at the 5 year and 10 year</p>

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	<p>recruitment process suggests there were some</p> <p><b>Potential sources of bias:</b> NR</p>	<p>25 individuals (<b>Karlstad 2</b>). The 1-year follow-up comprised the same measures undertaken at the baseline examination. The remedial measures undertaken during the first year were repeated for the next 2 years with yearly follow-ups, the last one being the 3-year follow-up</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> 100 participants</p> <p><b>How delivered:</b> Information on caries and gingivitis/periodontitis was presented and oral hygiene instruction was given</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months</p> <p><b>How long for:</b> 3 years</p> <p><b>Group 3<sub>1</sub> Individual Educational:</b></p> <p><b>What was delivered:</b> In this group, the individuals each underwent an individual basic preventive programme according to the National Swedish Board of Health and Welfare. The programme comprised 3 visits at 2-week intervals the first year. At the first visit information on caries and gingivitis/periodontitis</p>	<p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Open question – coded as correct or incorrect</p> <p><b>Time points measured:</b> Baseline, 1 year, 3 year, 5 year and 10 years</p> <p><b>6) Outcome name:</b> Knowledge of the most important part of the tooth to clean</p> <p><b>Outcome definition:</b> Which part of the tooth is the most important to clean? (open question) The “correct” response was considered to be either between the teeth and at the edge of the gingival margin, between the teeth, or at the edge of the gingival margin.</p> <p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Open question – coded as correct or incorrect</p>	<p>years): 28.5 (17.0) Proximal – Baseline: 27.6 (14.3) Proximal - End point (3 years): 23.8 (13.1)</p> <p>Group 2<sub>1</sub> (Karlstad 0): Full mouth – Baseline: 40.4 (16.5) Full mouth - End point (3 years): 15.0 (12.1) Proximal – Baseline: 33.5 (11.7) Proximal - End point (3 years): 13.3 (10.2)</p> <p>Group 2<sub>1</sub> (Karlstad 1and2): Full mouth – Baseline: 46.7 (23.4) Full mouth - End point (3 years): 20.6 (19.7) Proximal – Baseline: 36.3 (14.4) Proximal - End point (3 years): 16.3 (14.5)</p> <p>Group 3<sub>1</sub> (Individual Educational): Full mouth – Baseline: 38.8 (22.1) Full mouth - End point (3 years): 19.4 (17.4) Proximal – Baseline: 31.9 (16.3) Proximal - End point (3</p>	<p>results in Paper Two.</p> <p><b>Evidence gaps:</b> The model of preventive work long discussed is the possibility to influence dental health positively using preventive measures directed to the whole population, that is basic prevention programmes, and then offering additional prophylaxis to individuals with a high or progressing dental disease activity. Basic factors in these strategies are the focus on fluorides, dietary counselling, and improvement in oral hygiene. These measures bring about both the chance to maintain health and a way of fighting disease. A high-risk approach where individuals</p>

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		<p>was presented and oral hygiene instruction was given based on plaque disclosure. The individual's oral status was reviewed at the next 2 visits. The 1-year follow-up comprised the measures undertaken at the baseline examination. Directly after the follow-up, the individuals were scheduled for a repetition of indicated information and oral hygiene instruction. The same was done at the 2-year follow-up, after which the individuals were called for a 3-year follow-up.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> 100 participants</p> <p><b>How delivered:</b></p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months</p> <p><b>How long for:</b> 3 years</p> <p><b>Group 4<sub>1</sub>, Group Educational:</b></p> <p><b>What was delivered:</b> The individuals in this group underwent the remedial measures recommended by the National Swedish Board of Health and Welfare for dental health preventive</p>	<p><b>Time points measured:</b> Baseline, 1 year, 3 year, 5 year and 10 years</p> <p><b>7) Outcome name:</b> Do you clean the area between your teeth?</p> <p><b>Outcome definition:</b> Do you clean the area between the teeth? The alternatives were yes or no.</p> <p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Yes or no – responses to question</p> <p><b>Time points measured:</b> Baseline, 1 year, 3 year, 5 year and 10 years</p> <p><b>8) Outcome name:</b> What aids do you use to clean your teeth approximately?</p> <p><b>Outcome definition:</b> What aids do you use to clean your teeth approximately? Open question if the respondent answered yes to the previous question</p>	<p>years): 16.6 (14.2)</p> <p>Group 4<sub>1</sub> (Group Education):</p> <p>Full mouth – Baseline: 36.3 (18.2)</p> <p>Full mouth - End point (3 years): 20.5 (16.6)</p> <p>Proximal – Baseline: 30.1 (14.3)</p> <p>Proximal - End point (3 years): 17.3 (12.9)</p> <p>Full mouth:</p> <p>After 3 years: in all groups the number of sites with gingivitis decreased (<math>p&lt;0.05</math>). Group 4<sub>1</sub> had statistically significant more sites with gingivitis (<math>p&lt;0.05</math>) than the other groups. The differences between the test groups were statistically non-significant.</p> <p>Proximal:</p> <p>After 3 years: in all groups the number of sites with gingivitis decreased (<math>p&lt;0.05</math>). Group 4<sub>1</sub> had statistically significant more sites with</p>	<p>are identified by screening has also been suggested. However high-risk strategies for controlling dental diseases have been questioned and it has been proposed that a population approach will provide virtually the same prevention effect with less effort and lower cost (Hausen et al 2000, Sheiham and Watt 2003). Loe (2000) and Van Loveren (2000) have called attention to the role of plaque as a common factor in preventing these diseases.</p> <p>Concerning costs it is mainly the direct expenses of the dental clinic that became lower in comparison with the chair-conducted programmes. The</p>

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		<p>programmes for adults but modified for group-based information with 3 visits that had essentially the same content as the programme followed by group 3. The programme was conducted as group activities with 10 individuals in each group.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> 100 participants</p> <p><b>How delivered:</b></p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months</p> <p><b>How long for:</b> 3 years</p> <p><b>Study groups for additional 2 years intervention and final (10 year) follow-up (Paper Two only):</b></p> <p>NOTE: These groups, which replaced the groups outlined above when the initial 3 year treatment period ended, are not based on randomisation but on previous group allocation and on gingival and carries status.</p> <p><b>Group 1<sub>2</sub>:</b></p> <p><b>What was delivered:</b> Individuals</p>	<p>(outcome 7)</p> <p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Open question – coded as correct or incorrect</p> <p><b>Time points measured:</b> Baseline, 1 year, 3 year, 5 year and 10 years NOTE: This data was not reported in full (i.e. for each year and group) and it was an additional question if respondents said “yes” to the previous question.</p> <p><b>9) Outcome name:</b> Mean number of snacks per day</p> <p><b>Outcome definition:</b> “How often do you eat or drink between meals” (question to patient)</p> <p><b>Outcome measure:</b> Patient reported</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Number of times.</p> <p>Alternatives ranged from 0 to 10 and then more</p>	<p>gingivitis (<math>p&lt;0.05</math>) than the other groups. The difference between the test groups were statistically non-significant</p> <p>After 3 years, the gingival status of 30 individuals in group 1<sub>1</sub>, none in Karlstad 0, 4 in Karlstad 1 and 2, 12 in group 3<sub>1</sub>, and 18 in group 4<sub>1</sub> was impaired.</p> <p>Regression model: A multiple logistic regression analysis with a forward stepwise selection of variables was performed to detect variables of importance to gingival health. The statistical analysis showed that a good gingival status at baseline was the most important predictor for a healthy gingival status after 3 years (odds ratio: 1.076, CI:1.055-1.099, <math>p&lt;0.001</math>).</p> <p>Participation in one of the 3 preventive programmes and knowledge of the 2</p>	<p>patients' costs can also be reduced if the group-based activity takes place somewhere else than in the clinic. This also paves the way for new research on how to disseminate a health message using modern technology.</p> <p><b>Source of funding:</b> Financial support for this study was given by Jonkoping County Council and the Institute for Postgraduate Dental Education, Jonkoping, Sweden.</p>

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		<p>who had &lt;20% gingivitis at this time underwent no prophylactic measures and were only given information after the 3 year follow-up. Individuals who had &gt;20% gingivitis or were in need of supplementary prophylaxis underwent basic prophylaxis (3 visits according to the previous model for group 3).</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists (94 participants at 4 year follow-up and 85 at five year follow-up).</p> <p><b>To whom:</b> The individuals in this group had previously not received any form of basic prophylaxis during the study's first 3 years.</p> <p><b>How delivered:</b> individual-based information</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months until treatment period ends.</p> <p><b>How long for:</b> 2 years after group reassignment (last follow-up was 7 years after reassignment or 10 years after study began)</p> <p><b>Group 2<sub>2</sub>:</b> <b>What was delivered:</b> All</p>	<p>than 10 times a day</p> <p><b>Time points measured:</b> Baseline, 1 year, 3 year, and 5 years</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p> <p>There is no mention of ITT being undertaken.</p> <p>For the clinical measures (plaque and gingivitis levels) one-way ANOVA was used to make comparisons between groups and between examination sessions. In addition a multiple logistic regression model was used to find the model of gingival health with the best overall fit. The dependent variable "gingival health" was defined as a dichotomous variable according to the individual full-mouth GI where a value50</p>	<p>major dental diseases caries and gingivitis or periodontitis were also statistically significant variables.</p> <p>Karlstad 0: OR: 0.034, CI: 0.010-0.121, <math>P&lt;0.001</math></p> <p>Karlstad 1/2: OR: 0.046, CI: 0.013-0.160, <math>P&lt;0.001</math></p> <p>Group 3<sub>1</sub>: OR: 0.066, CI: 0.023-0.184, <math>P&lt;0.001</math></p> <p>Group 4<sub>1</sub>: OR: 0.191, CI: 0.073-0.497, <math>P=0.001</math></p> <p><b>Behavioural results:</b></p> <p><b>3) Knowledge of the 2 most common dental diseases:</b></p> <p>% of participants (actual number in brackets)</p> <p>Group 1<sub>1</sub> (Control): Baseline: 58 (57) 1 year: 61 (59) 3 year: 79 (74)</p> <p>Group 2<sub>1</sub> (Karlstad): Baseline: 49 (48) 1 year: 81 (79) 3 year: 86 (78)</p> <p>Group 3<sub>1</sub> (Individual Educational):</p>	

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		<p>individuals in this group had undergone basic prophylaxis comprising visits every second month for 3 years. Therefore, only the individuals who were in need of supplementary underwent additional prophylaxis. This occurred as an individual supplementary programme. The other individuals were offered no additional prophylaxis and only received information after the 3-year follow-up, independent of whether they had &gt;20% gingivitis or &lt;20% gingivitis.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> All individuals in this group had undergone basic prophylaxis comprising visits every second month for 3 years (93 participants at 4 year follow-up and 83 at five year follow-up).</p> <p><b>How delivered:</b> individual-based information – not clear whether this was different to intervention group 3 or not</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months until treatment period ends.</p> <p><b>How long for:</b> 2 years after</p>	<p>comprised one-third of the individuals with the lowest GI scores and a value<sup>51</sup> comprised one-third of the individuals with the highest GI scores.</p> <p>For the behavioural outcomes chi-square was used to test significance across study groups on a cross-sectional basis, as well as to test significance within groups on a longitudinal basis. In the case of 2 behavioural outcomes ("mean number of snacks per day" and "What aids do you use to clean your teeth approximately?") no statistical tests appear to have been undertaken.</p>	<p>Baseline: 52 (52) 1 year: 72 (71) 3 year: 74 (70)</p> <p>Group 4<sub>1</sub> (Group Education): Baseline: 59 (58) 1 year: 76 (74) 3 year: 86 (79)</p> <p>Group 1<sub>2</sub>: 5 year: 76 (63) 10 year: 96 (84)</p> <p>Group 2<sub>2</sub>: 5 year: 90 (77) 10 year: 91 (84)</p> <p>Group 3<sub>2</sub>: 5 year: 79 (71) 10 year: 89 (83)</p> <p>Group 4<sub>2</sub>: 5 year: 88 (76) 10 year: 89 (78)</p> <p>Longitudinal comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• Group 1<sub>i</sub> 1 year - 3 years</li> <li>• Group 2<sub>i</sub> baseline – 1 year</li> <li>• Group 3<sub>i</sub> baseline – 1 year</li> <li>• Group 4<sub>i</sub> baseline</li> </ul>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>group reassignment (last follow-up was 7 years after reassignment or 10 years after study began)</p> <p><b>Group 3<sub>2</sub>:</b>  <b>What was delivered:</b> All the individuals in this group had also undergone basic prophylaxis previously. Therefore only the individuals who were in need of supplementary prophylaxis underwent additional prophylaxis. This occurred as an individual supplementary programme. The other individuals underwent no prophylaxis and only received information after the 3-year follow-up, independent of whether they had &gt;20% gingivitis or &lt;20% gingivitis.</p> <p><b>Theoretical basis: N/A</b></p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> (93 participants at 4 year follow-up and 89 at five year follow-up)</p> <p><b>How delivered:</b> individual-based information – not clear whether this was different to intervention group 3 or not</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12</p>		<p>– 1 year  Group comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• 1 year; 1<sub>1</sub> – 2<sub>1</sub></li> <li>• 1 year; 1<sub>1</sub> - 4<sub>1</sub></li> <li>• 5 years; 1<sub>ii</sub>-4<sub>ii</sub></li> <li>• 5 years; 1<sub>ii</sub>-2<sub>ii</sub></li> </ul> <p><b>4) Knowledge of the causes of caries</b></p> <p>% of participants (actual number in brackets)</p> <p>Group 1<sub>1</sub> (Control):  Baseline: 25 (25)  1 year: 30 (29)  3 year: 42 (39)</p> <p>Group 2<sub>1</sub> (Karlstad):  Baseline: 25 (25)  1 year: 39 (38)  3 year: 54 (50)</p> <p>Group 3<sub>1</sub> (Individual Educational):  Baseline: 33 (33)  1 year: 45 (44)  3 year: 45 (42)</p> <p>Group 4<sub>1</sub> (Group Education):  Baseline: 24 (24)  1 year: 35 (34)  3 year: 43 (40)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>months until treatment period ends.</p> <p><b>How long for:</b> 2 years after group reassignment (last follow-up was 7 years after reassignment or 10 years after study began)</p> <p><b>Group 4<sub>2</sub>:</b>  <b>What was delivered:</b> All individuals in this group had undergone basic prophylaxis on a group basis. Therefore individuals who had &gt;20% gingivitis or were in need of supplementary prophylaxis underwent the same basic prophylaxis as group 3<sub>1</sub> had previously (3 visits). Individuals who had &lt;20% gingivitis at this time were offered no prophylactic measures and only received information after the 3-year follow-up.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> The examinations were conducted by the authors, 2 experienced dental hygienists, and 2 dentists.</p> <p><b>To whom:</b> All individuals in this group had undergone basic prophylaxis on a group basis. (93 participants at 4 year follow-up and 89 at five year follow-up)</p> <p><b>How delivered:</b> essentially the same content as the programme</p>		<p>Group 1<sub>2</sub>:  5 year: 42 (35)  10 year: 63 (55)</p> <p>Group 2<sub>2</sub>:  5 year: 49 (43)  10 year: 70 (64)</p> <p>Group 3<sub>2</sub>:  5 year: 43 (39)  10 year: 70 (65)</p> <p>Group 4<sub>2</sub>:  5 year: 43 (37)  10 year: 56 (49)</p> <p>Longitudinal comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• Group 2<sub>1</sub> baseline – 1 year</li> <li>• Group 2<sub>1</sub> 1 year – 3 years</li> </ul> <p>Group comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• 1 year; 1<sub>1</sub> – 3<sub>1</sub></li> </ul> <p><b>5) Knowledge of the causes of gingivitis/periodontitis</b></p> <p>% of participants (actual number in brackets)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>followed by group 3</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Follow-up every 12 months until treatment period ends.</p> <p><b>How long for:</b> 2 years after group reassignment (last follow-up was 7 years after reassignment or 10 years after study began)</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 400</b></p> <p><b>Group 1<sub>1</sub> (Control) N = 100</b></p> <p><b>Group 2<sub>1</sub> (Karlstad)<sub>1</sub> N = 100</b> (incl. 50 in Karlstad 0 and 50 in Karlstad 1 and 2)</p> <p><b>Group 3<sub>1</sub> (Individual Educational)<sub>1</sub> N = 100</b></p> <p><b>Group 4<sub>1</sub> (Group Educational)<sub>1</sub> N = 100</b></p> <p><b>Sample sizes for second set of groups</b> (NOTE: it is not absolutely certain this was initial number allocated to each group at baseline (3 year stage) as the earliest information we have is for the 4 year follow-up):</p> <p><b>Group 1<sub>2</sub> N (4 Year) = 94 (58</b> received prophylaxis; 36 no prophylaxis)</p> <p><b>Group 1<sub>2</sub> N (5 Year) = 85 (7</b> received prophylaxis; 78 no</p>		<p>Group 1<sub>1</sub> (Control): Baseline: 59 (54) 1 year: 54 (49) 3 year: 40 (37)</p> <p>Group 2<sub>1</sub> (Karlstad): Baseline: 54 (51) 1 year: 57 (54) 3 year: 68 (62)</p> <p>Group 3<sub>1</sub> (Individual Educational): Baseline: 58 (50) 1 year: 65 (63) 3 year: 55 (51)</p> <p>Group 4<sub>1</sub> (Group Education): Baseline: 61 (54) 1 year: 53 (48) 3 year: 61 (57)</p> <p>Group 1<sub>2</sub>: 5 year: 58 (48) 10 year: 68 (59)</p> <p>Group 2<sub>2</sub>: 5 year: 77 (66) 10 year: 79 (73)</p> <p>Group 3<sub>2</sub>: 5 year: 73 (66) 10 year: 76 (71)</p> <p>Group 4<sub>2</sub>: 5 year: 73 (61)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>prophylaxis)</p> <p><b>Group 2<sub>2</sub> N (4 Year) = 93</b> (13 received prophylaxis; 80 no prophylaxis)</p> <p><b>Group 2<sub>2</sub> N (5 Year) = 83</b> (20 received prophylaxis; 63 no prophylaxis)</p> <p><b>Group 3<sub>2</sub> N (4 Year) = 93</b> (12 received prophylaxis; 81 no prophylaxis)</p> <p><b>Group 3<sub>2</sub> N (5 Year) = 89</b> (8 received prophylaxis; 81 no prophylaxis)</p> <p><b>Group 4<sub>2</sub> N (4 Year) = 93</b> (39 received prophylaxis; 54 no prophylaxis)</p> <p><b>Group 4<sub>2</sub> N (5 Year) = 89</b> (21 received prophylaxis; 68 no prophylaxis)</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): <b>NR</b></p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>		<p>10 year: 72 (63)</p> <p>Longitudinal comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• Group 1<sub>ii</sub> 3 year – 5 years</li> <li>• Group 3<sub>ii</sub> 3 year – 5 years</li> </ul> <p>Group comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• 3 years; 1<sub>1</sub> – 2<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-4<sub>1</sub></li> <li>• 5 years; 1<sub>ii</sub>-2<sub>ii</sub></li> <li>• 5 years; 1<sub>ii</sub>-3<sub>ii</sub></li> </ul> <p><b>6) Knowledge of the most important part of the tooth to clean</b></p> <p>% of participants (actual number in brackets)</p> <p>Group 1<sub>1</sub> (Control): Baseline: 64 (64) 1 year: 73 (71) 3 year: 75 (70)</p> <p>Group 2<sub>1</sub> (Karlstad): Baseline: 64 (64) 1 year: 86 (82) 3 year: 87 (81)</p> <p>Group 3<sub>1</sub> (Individual</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>Educational):            Baseline: 69 (68)            1 year: 80 (78)            3 year: 86 (80)</p> <p>Group 4<sub>1</sub> (Group Education):            Baseline: 67 (67)            1 year: 87 (85)            3 year: 90 (85)</p> <p>Group 1<sub>2</sub>:            5 year: 83 (69)            10 year: 86 (76)</p> <p>Group 2<sub>2</sub>:            5 year: 87 (76)            10 year: 92 (85)</p> <p>Group 3<sub>2</sub>:            5 year: 83 (75)            10 year: 91 (85)</p> <p>Group 4<sub>2</sub>:            5 year: 88 (76)            10 year: 84 (74)</p> <p>Longitudinal comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• Group 2<sub>1</sub> baseline – 1 year</li> <li>• Group 4<sub>1</sub> baseline – 1 year</li> </ul> <p>Group comparison –</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• 1 year; 1<sub>1</sub> – 4<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-2<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-4<sub>1</sub></li> </ul> <p><b>7) Do you clean the area between your teeth?</b></p> <p>% of participants (actual number in brackets)</p> <p>Group 1<sub>1</sub> (Control): Baseline: 51 (51) 1 year: 57 (54) 3 year: 64 (68)</p> <p>Group 2<sub>1</sub> (Karlstad): Baseline: 57 (57) 1 year: 98 (95) 3 year: 97 (89)</p> <p>Group 3<sub>1</sub> (Individual Educational): Baseline: 47 (46) 1 year: 91 (89) 3 year: 92 (85)</p> <p>Group 4<sub>1</sub> (Group Education): Baseline: 57 (57) 1 year: 88 (86) 3 year: 93 (86)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>Group 1<sub>2</sub>: 5 year: 87 (71) 10 year: 70 (62)</p> <p>Group 2<sub>2</sub>: 5 year: 95 (83) 10 year: 70 (64)</p> <p>Group 3<sub>2</sub>: 5 year: 91 (82) 10 year: 63 (58)</p> <p>Group 4<sub>2</sub>: 5 year: 90 (77) 10 year: 67 (59)</p> <p>Longitudinal comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• Group 2<sub>i</sub> baseline – 1 year</li> <li>• Group 3<sub>i</sub> baseline – 1 year</li> <li>• Group 4<sub>i</sub> baseline – 1 year</li> <li>• Group 1<sub>ii</sub> 3 years – 5 years</li> </ul> <p>Group comparison – results significant at <math>p&lt;0.05</math>:</p> <ul style="list-style-type: none"> <li>• 1 year; 1<sub>1</sub> – 2<sub>1</sub></li> <li>• 1 year; 1<sub>1</sub> - 3<sub>1</sub></li> <li>• 1 year; 1<sub>1</sub> - 4<sub>1</sub></li> </ul>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<ul style="list-style-type: none"> <li>• 1 year; 2<sub>1</sub> - 4<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-2<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-3<sub>1</sub></li> <li>• 3 years; 1<sub>1</sub>-4<sub>1</sub></li> </ul> <p><b>8) What aids do you use to clean your teeth approximately?</b></p> <p>Both toothpicks and dental floss were used equally as aids for approximal cleaning at the baseline examination in all groups. A significant shift to dental floss as the primary aid occurred in the test groups after 1 year. When prophylactic measures were begun in group 1 after 3 years, the same change in favour of dental floss also occurred as approximal cleaning increased. This distribution between toothpicks and dental floss remained at the 10 year follow-up.</p> <p><b>9) Mean number of snacks per day</b></p> <p>Mean scores (no standard deviations are</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>reported in the paper). This outcome was not measured at Year 10.</p> <p>Group 1<sub>1</sub> (Control): Baseline: 4.4 1 year: 3.8 3 year: 3.8</p> <p>Group 2<sub>1</sub> (Karlstad): Baseline: 4.0 1 year: 3.8 3 year: 3.5</p> <p>Group 3<sub>1</sub> (Individual Educational): Baseline: 4.0 1 year: 4.0 3 year: 3.6</p> <p>Group 4<sub>1</sub> (Group Education): Baseline: 4.4 1 year: 4.2 3 year: 4.1</p> <p>Group 1<sub>2</sub>: 5 year: 3.7</p> <p>Group 2<sub>2</sub>: 5 year: 3.4</p> <p>Group 3<sub>2</sub>: 5 year: 3.8</p> <p>Group 4<sub>2</sub>:</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>5 year: 4.0</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>Paper Two indicates that the drop-out rates during the study's first 3 years were 1% (4 individuals), 1.8% (7 individuals) and 3.8% (15 individuals) after 1,2 and 3 years respectively, in total 6.5% (26 individuals). The main reason for the drop-outs during these 3 years was moving from the area 4% (16 individuals), economic reasons 0.5% (2 individuals), lack of interest 1.75% (7 individuals) and deceased 0.25% (1 individual). The drop-outs were evenly distributed between the groups. At the 5 year follow-up the drop-out rate was 13.5% (54 individuals) and at the 10 year follow-up 9.8% (39 individuals).</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p><b>Conclusion:</b></p> <p>Paper One  The present paper demonstrates the effect of the same programmes on the oral health behaviour of the participants in the test groups, recorded as changes in the presence of plaque and gingivitis.</p> <p>In all test programmes, the full-mouth and proximal presence of plaque and gingivitis decreased significantly on the group level in relation to the control group. However, the control group was also affected positively concerning levels of plaque and gingivitis. One probable explanation may be improved awareness of the subjects taking part in a study with regular annual clinical examinations and the use of questionnaires that bring issues on dental health up to date.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>The greatest improvement was found in the group who visited the dentist for individual information and instruction in oral hygiene every second months. Professional tooth cleaning provided no clinical benefit beyond that derived from individual and group-based health education.</p> <p>The statistical analysis showed that the variables “gingival health at baseline”, “belonging to one of the test programmes”, and “knowledge of both caries and gingivitis or periodontitis” were the best predictors of good oral health.</p> <p>Paper Two</p> <p>The preventive measures that targeted the individual-based on previously received prophylaxis and the individual’s symptoms and were begun after 3</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>years had no effect on knowledge in some of the test groups. Neither was the level of approximal cleaning affected most likely because of the high level already achieved. It should be noted however, than in years 4 and 5 only 23% and 18% respectively of all the individuals in the 3 test groups underwent additional preventive measures. Dietary behaviour was also unaffected in these years.</p> <p>It was possible not only to affect oral hygiene behaviour positively but also to maintain this affect over a 5 year period when monitoring of the type used in the study ceased, however behaviour deteriorated. At the 10 year follow-up, that is 5 years after the study had actually ended, reported approximal cleaning had deteriorated to 68% of all individuals. On the other hand an increase in knowledge</p>	

<b>Study details</b>	<b>Population and setting</b>	<b>Method of allocation to intervention/control</b>	<b>Outcome definitions and method of analysis</b>	<b>Results</b>	<b>Notes by review team</b>
				was reported. Preventive work should consequently focus on behaviour by concentrating on patient-centred attitudes.	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Humphris, G.M., R.S. Ireland, and E.A. Field</p> <p><b>Year:</b> 2001 (Papers One and Two) 2004 (Paper Three)</p> <p><b>Citation:</b> Humphris, G.M., R.S. Ireland, and E.A. Field, Immediate knowledge increase from an oral cancer information leaflet in patients attending a primary healthcare facility: a randomised controlled trial. <i>Oral Oncology</i>, 2001. 37(1): p. 99-102. (Paper One)</p> <p>Humphris, G.M., R.S. Ireland, and E.A. Field, Randomised trial of the psychological effect of information about oral cancer in primary care settings. <i>Oral Oncology</i>, 2001.</p>	<p><b>Source Population(s):</b> Practices were selected from areas of the north west of England that were situated in a wide ranging set of localities.</p> <p><b>Setting:</b> Practices were selected from areas of the north west of England that were situated in a wide ranging set of localities. Deprivation has been highlighted as a key variable in predicting various aspects of oral health. The Townsend indices associated with the locality from which the practice resided were derived at ward level, from the 1991 Census of Population Local Base Statistics, accessed via the Manchester Computing Centre. A positive score denotes greater</p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> Pseudo randomisation - whole sessions were allocated to either group. Baseline imbalances were inspected and found not to be significant with the exception of gender. Gender was controlled for in the analysis.</p> <p><b>Report how confounding factors were minimised:</b> Contamination would have been minimised as randomisation was by group, while analysis to remove the possibility of variables confounding interpretation was conducted. However the allocation was not concealed and there does not appear to have been any blinding.</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> Patients were given the leaflet and instructed to read the content. Then the leaflet was collected and the patient was handed the</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name: 1)</b> Knowledge of oral cancer</p> <p><b>Outcome definition:</b> Knowledge of items in questionnaire</p> <p><b>Outcome measure:</b> Questionnaire response</p> <p><b>Outcome measure validated:</b> Yes</p> <p><b>Unit of measurement:</b> Correct or incorrect answers</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name: 2)</b> Intention to have a screen for oral cancer</p> <p><b>Outcome definition:</b> Participants were asked in the questionnaire about</p>	<p>For each outcome report</p> <p><b>1) Knowledge of oral cancer</b></p> <p>Results by dental or medical setting – mean score with 95% confidence intervals in brackets:</p> <p>Intervention group: Dental: 30.74 (30.15-31.33) Medical: 29.52 (28.89-30.16)</p> <p>Control group: Dental: 25.68 (25.07-26.28) Medical: 24.66 (24.00-25.31)</p> <p>Knowledge levels of oral cancer were greater by 5 points in those who received the leaflet: <math>F[1,739]=246.24, P&lt;0.0001</math>.</p> <p>Levene's test of homogeneity of variance across groups confirmed that the effect shown by the</p>	<p><b>Limitations identified by author:</b></p> <p>Paper One: Criticism has been levelled at studies which attempt to assess the effect of leaflets when it is not clear whether the leaflet has been read, e.g. [22]. Admittedly, the present study can only show the immediate effects on knowledge of oral cancer and further work is required to determine any longer-term benefits.</p> <p>The result does not exclude the possibility of setting being part responsible for the longer-term retention of information. It had been expected that patients reading the leaflet in a dental waiting area may have strengthened their interest in the topic of oral cancer.</p>

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<p>37(7): p. 548-52. (Paper Two)</p> <p>Humphris, G.M. and E.A. Field, An oral cancer information leaflet for smokers in primary care: results from 2 randomised controlled trials. Community Dentistry and Oral Epidemiology, 2004. 32(2): p. 143-9. (Paper Three)</p> <p>[NOTE: This paper also reports results from a separate study – these are dealt with in a separate evidence table - Humphris et al 2003]</p> <p><b>Country of study:</b> England</p> <p><b>Aim of Study:</b> To determine the immediate influence of a validated patient information leaflet (PIL) in patient anxiety and intention to have a screen for</p>	<p>deprivation. The mean and standard deviation of the index compiled from the 14 wards associated with the practices sampled was 3.92 and 4.24, respectively. The equivalent values for Merseyside were 3.68 and 4.56.</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Mean age for leaflet (intervention) group = 43.96 Mean age for no leaflet (control) group = 43.31</p> <p><b>Sex:</b> % of female in leaflet group = 54.6% % of females in no leaflet group = 62.3%</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p>	<p>questionnaire sheet for completion. Patients completed the questionnaire</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Trained interviewers recruited participants and gave out the leaflet</p> <p><b>To whom:</b> Half the sample (400)</p> <p><b>How delivered:</b> All information was written in the leaflet. The framing was partly negative, with mention of mortality rates. The leaflet possessed a moderately easy reading level according to the Flesch reliability index. An A4 glossy paper design was used and factual information was aided by bullet points</p> <p><b>When/where:</b> Dental practices and medical practices</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> One day</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> All participants completed the questionnaire. Half the sample (400)</p> <p><b>By whom:</b> Trained interviewers recruited participants</p> <p><b>To whom:</b> Half the sample (400)</p>	<p>their intention to have a screen for oral cancer: "how likely would you agree to have a check-up of your mouth for cancer if one was offered by your dentist?"</p> <p><b>Outcome measure:</b> Questionnaire response</p> <p><b>Outcome measure validated:</b> Yes</p> <p><b>Unit of measurement:</b> 7 point scale from 'extremely unlikely' to 'extremely likely'</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name:</b> 3</p> <p>Anxiety levels</p> <p><b>Outcome definition:</b> Anxiety about having a check for mouth cancer</p> <p><b>Outcome measure:</b> Questionnaire response</p> <p><b>Outcome measure validated:</b> Yes</p> <p><b>Unit of measurement:</b></p>	<p>ANOVA was not biased (<math>F[7,740]= 1.16, P&gt;0.3</math>). Those who responded in dental surgeries indicated approximately one extra correct knowledge item compared to respondents in medical surgeries. The effect of reading the leaflet in different dental or medical settings was insignificant (<math>F[1,739]= 0.10, P&gt;0.8</math>).</p> <p>Questionnaire results:</p> <p>Intervention group(s): Sign of mouth cancer: a red patch in the mouth: 87.9% More likely to get mouth cancer if a man: 67.3% Sign of mouth cancer: a white patch in the mouth: 85.3% More likely to get mouth cancer if drink alcohol heavily: 72.3% A check up for mouth cancer is carried out using x-rays: 82.7% In the UK about 1000 people die a year of mouth cancer: 82.8%</p>	<p>Paper Two: A limitation of the study was the use of single item rating scales to assess the anxiety, intention and perceived risk constructs. A more sophisticated multi-item approach would be preferable. Some positive evidence of the reliability of the scales employed was found, although the undergraduate students used, to gain this supporting information, would tend to give reliability estimates at their upper bound.</p> <p>Paper Three: Paper Two: The limitations of these studies bear inspection. First, we adopted self-report to categorise the patients' smoking status rather than continue testing. This later approach would have raised the costs</p>

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<p>oral cancer in primary care attendees (Papers 1 and 2).</p> <p>To investigate whether primary care patients who claim to smoke tobacco gain greater benefit of a patient information leaflet on oral cancer than non-smokers (Paper Three).</p> <p><b>Study Design:</b> RCT</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity</b>(++, +, or -): +</p>	<p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Each interviewer was required to approach 50 patients. The interviewers were trained to ask for consent and to note all refusals. Gender and age group was determined to assess for a possible difference in response to questions (e.g. patients refusing to enter study may diminish generalisation of the findings as displayed).</p> <p>Randomisation into leaflet (experimental) and non- leaflet (control) groups was conducted by designating whole</p>	<p><b>How delivered:</b> N/A</p> <p><b>When/where:</b> Dental practices and medical practices</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> One day</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N</b> = 800</p> <p><b>Intervention group N</b> = Half the sample (400)</p> <p><b>Control Group N</b> = Half the sample (400)</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): There were a larger proportion of females in the 'no leaflet' control group. Subsequent analyses controlled for gender to remove the possibility of this variable confounding interpretation.</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): At 80% power to detect a mean difference of one correct question assuming a common SD of 4.5 when the sample sizes in the 2 groups are 220 and respectively, a total sample size of 800 would be required. However due to drop-</p>	<p>Five category rating scale from 'not anxious' to 'extremely anxious'</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name:</b> 4)</p> <p>Perceived risk</p> <p><b>Outcome definition:</b> Perceived risk of mouth cancer in the next year</p> <p><b>Outcome measure:</b> Questionnaire response</p> <p><b>Outcome measure validated:</b> Yes</p> <p><b>Unit of measurement:</b> Seven-point scale ranging from 'extremely unlikely' to 'extremely likely'</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were</p>	<p>More likely to get mouth cancer if aged over 50 years old: 67.9%</p> <p>Sign of mouth cancer: a yellow patch in the mouth: 81.9%</p> <p>Sign of mouth cancer: an ulcer that does not heal: 94.8%</p> <p>Sign of mouth cancer: a painless ulcer: 74.9%</p> <p>More likely to get mouth cancer if smoke tobacco: 81.7%</p> <p>More likely to get mouth cancer is chew tobacco: 64.3%</p> <p>More likely to get mouth cancer is lost all teeth: 91.7%</p> <p>Control group(s)</p> <p>Sign of mouth cancer: a red patch in the mouth: 48.3%</p> <p>More likely to get mouth cancer if a man: 30.1%</p> <p>Sign of mouth cancer: a white patch in the mouth: 50.1%</p> <p>More likely to get mouth cancer if drink alcohol heavily: 38.9%</p> <p>A check up for mouth cancer is carried out using x-rays: 49.9%</p>	<p>of the study considerably. Further, as the correlation between self-report and continue testing is very high particularly when demand characteristics of the question are low (anonymous questionnaire), as in this case, a second limitation was that a post-test only design was employed.</p> <p>Previous work, however, by our group suggests that the advantage of a more complex, pre-test design, especially in a primary care setting, might be marginal.</p> <p>Third, the external validity of the findings, that is generalisability, should be treated with some caution.</p> <p>Randomisation was conducted by session rather than by individual. In addition both studies were conducted in the North West of the UK. Study 1 [the study reviewed</p>

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	<p>sessions to either experimental or control group.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> Wide ranging set of localities within the area selected. The mean deprivation scores and standard deviations of the wards associated with the practices according to the Townsend indices were close to the mean and standard deviations for Merseyside as a whole.</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> 855</p>	<p>outs only 739 responses were received (Paper One only)</p>	<p>made for any baseline differences in important confounders):</p> <p>ANOVA was used in Paper Three to examine the interaction effects of receiving/not receiving a leaflet with smoking/not smoking. Other variables such as gender were also included. "Anxiety levels" and "Intention to have screen" were analysed using the Mann-Whitney U test.</p>	<p>In the UK about 1000 people die a year of mouth cancer: 50.1% More likely to get mouth cancer if aged over 50 years old: 38.9%</p> <p>Sign of mouth cancer: a yellow patch in the mouth: 53.4%</p> <p>Sign of mouth cancer: an ulcer that does not heal: 74.2%</p> <p>Sign of mouth cancer: a painless ulcer: 55.1%</p> <p>More likely to get mouth cancer if smoke tobacco: 71.8%</p> <p>More likely to get mouth cancer is chew tobacco: 56.5%</p> <p>More likely to get mouth cancer is lost all teeth: 88.1%</p> <p>Paper Three – Subgroup breakdown by smokers and non-smokers:</p> <ul style="list-style-type: none"> <li>Intervention group: People that received the leaflet and responded to the questionnaire (374): 276 non-smokers and 98</li> </ul>	<p>[here] however confirmed that the variation of deprivation level (as assessed by the Townsend score) was independent of mean knowledge level for the participating patients at the range of practices sampled.</p> <p><b>Limitations identified by review team:</b></p> <p>50 patients were approached in each clinic but the paper doesn't say why the 50 were selected. The age level of refusers was significantly higher than the participants.</p> <p>Whole sessions were allocated to either group so randomisation was pseudo. Allocation was not concealed and there is no information on blinding.</p> <p>Not all questions in the questionnaire are</p>

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	<p>patients were approached, of whom 55 refused. Reasons for refusal included: no spectacles for reading (n=25); did not have time (n=15); not interested (n=8); unable to read or write (n=6); and too much pain from symptoms (n=1). The response rate was 94%.</p> <p><b>Potential sources of bias:</b></p>			<p>smokers</p> <ul style="list-style-type: none"> <li>Control group: People that did not receive the leaflet and responded to the questionnaire (365): 263 non-smokers and 102 smokers</li> </ul> <p>Paper Three – Subgroup ANOVA results:</p> <ul style="list-style-type: none"> <li>There was a small overall difference in knowledge across the smoking classification, regardless of leaflet exposure [smokers = 27.18, 95% CI: 26.59, 27.78; nonsmokers= 27.95, 95% CI: 27.58, 28.31; <math>F(1, 733)= 5.19, p=0.023</math>]</li> <li>The interaction of smoking status with experimental condition was significant [<math>F(1, 733)= 4.65, p=0.031</math>]</li> </ul>	<p>outlined in the paper or reported on.</p> <p>There was no information on how drop-outs affected the results (although less than 20% dropped out).</p> <p>The questionnaire was given directly after reading the leaflet so the follow-up time was not meaningful.</p> <p><b>Evidence gaps:</b></p> <p>Paper One: The present study can only show the immediate effects on knowledge of oral cancer and further work is required to determine any longer-term benefits.</p> <p>Future studies in the oral cancer field are needed. There is a need to focus on the longer-term increase in knowledge and awareness of oral cancer from written</p>

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				<ul style="list-style-type: none"> <li>Respondents not shown the leaflet who claimed to smoke had lower levels of knowledge than nonsmokers (mean= 24.17, 95% CI: 23.33, 25.01; and mean= 25.65, 95%CI: 25.12, 26.18, respectively)</li> <li>Whereas similar knowledge levels were found in smokers and nonsmokers after reading the leaflet (mean= 30.19, 95% CI: 29.35, 31.04; and mean= 30.24, 95%CI: 29.74, 30.75 respectively).</li> <li>Gender, type of practice attended (dental v medical) and past smoking history (never smoke v smoked previously) did not explain extra variance of oral cancer knowledge when fed into an ANOVA model with leaflet and the</li> </ul>	<p>information supplied in general practice. In addition assessment is required of the benefits of using leaflets with targeted populations such as smokers and those from areas of high deprivation. The relationship between increased knowledge, anxiety concerning oral cancer and likelihood of patients accepting an oral health screen is not understood and explorative investigation is warranted.</p> <p><b>Paper Two:</b> Further work is required to understand the relationship of patient attitudes to behavioural intentions and actual behaviour. In addition, patient views about having a screen need urgent study to determine whether there are identifiable psychological costs as</p>

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				<p>associated interaction term (<math>p&gt;0.05</math>)</p> <p><b>2)</b> Intention to have a screen for oral cancer</p> <p>Whole sample: Mean: 5.70 Standard Error: 0.06</p> <p>Intervention group: Mean: 5.89 Standard Error: 0.08</p> <p>Control group: Mean: 5.52 Standard Error: 0.09</p> <p>Reported intervention to have an oral cancer screen was higher in the information group than the control group. This was confirmed by conducting the Mann-Whitney U test on the 7 category rating scale (<math>z=-3.67</math>, <math>P&lt;0.001</math>). To support the above analysis, it was found that 79.3% of those exposed to the leaflet compared to 69.8% who had not, reported they were more likely</p>	<p>already. The data from this present study would support the view that informing patients in primary care, by a leaflet about oral cancer has, on average, no adverse effects.</p> <p><b>Paper Three:</b> An issue that warrants further investigation is the extent that introducing written materials, similar to the patient information leaflet used in this study, may influence clinician behaviour.</p> <p><b>Source of funding:</b> <b>NR</b></p>

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				<p>(i.e. extremely likely or quite likely categories) to have a screen; 95% confidence interval for difference 4.0-15%).</p> <p>In addition a multivariate logistic regression analysis was conducted with intention to have a screen as a dependent variable. Significant predictors of intention to agree to have a screen were knowledge of oral cancer and anxiety about the screen.</p> <p><b>3) Anxiety levels</b></p> <p>Whole sample: Mean: 1.78 Standard Error: 0.04</p> <p>Intervention group: Mean: 1.71 Standard Error: 0.05</p> <p>Control group: Mean: 1.86 Standard Error: 0.06</p> <p>Those participants given information</p>	

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				<p>reported reduced anxiety (Mann-Whitney U test: <math>z=-2.07</math>, <math>P&lt;0.05</math>) compared with controls. A logistic regression model was used to make adjustments for gender which found that gender imbalances were not responsible for this difference.</p> <p><b>4) Perceived risk</b></p> <p>Whole sample: Mean: 2.53 Standard Error: 0.05</p> <p>Intervention group: Mean: 2.49 Standard Error: 0.07</p> <p>Control group: Mean: 2.57 Standard Error: 0.08</p> <p><b>Attrition details:</b> Less than 20% drop outs. 35 were from control group while 26 were from the intervention group. No information about how this affected results.</p> <p><b>Conclusion:</b></p>	

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				<p>Paper One: Two important issues were highlighted by the findings. First, the influence of the leaflet was independent of setting as the knowledge increase was no greater in the dental or medical practices. Second, the leaflet appeared to achieve important gains in knowledge about signs and risk factors of oral cancer. The leaflet did not influence knowledge substantially, on some items, and this appeared to be explained by a moderate ceiling effect. For example, 88% of patients, without access to the leaflet, were already aware that the loss of teeth was not a risk factor.</p> <p>Paper Two: Provision of information about oral cancer to patients attending primary care facilities appeared to have no adverse effects</p>	

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				<p>on likelihood to agree to a screen or result in increased anxiety. Intention to agree to have a screen was predicted positively by knowledge level of oral cancer and negatively by anxiety towards the screen, controlling for age, sex and practice type. These results support the involvement of practitioners in introducing an educational element into their contact with patients. This would improve the acceptability of opportunistic screening for oral cancer.</p> <p>Paper Three: Smokers were reporting identical knowledge levels to their non-smoking counterparts, but only when having read the leaflet. Without access to the leaflet, patients who smoked were not as knowledgeable about oral cancer.</p>	

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<p><b>Author:</b> Humphris, B. M, Freeman, R, Clarke, H.M.M</p> <p><b>Year:</b> 2004</p> <p><b>Citation:</b> Humphris, G.M., Freeman, R., and H.M.M. Clarke. Risk perception of oral cancer in smokers attending primary care: a randomised controlled trial. <i>Oral Oncology</i> (2004); 40; 916-924</p> <p><b>Country of study:</b> Northern Ireland</p> <p><b>Aim of Study:</b> To test the effect of a disease specific Patient Information Leaflet (PIL) on the oral cancer risk perceptions and knowledge of oral cancer of patients attending their dentist for routine care.</p> <p><b>Study Design:</b></p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed) Patients attending 20 general dental practices in Northern Ireland were invited to participate. Twenty practices were selected (36% of all general dental practitioners) within the Southern Health and Social Services Board (SHSSB) in Northern Ireland.</p> <p><b>Setting:</b> Southern Health and Social Services Board, Northern Ireland. The mean Noble deprivation index, based upon the postcode of the practice, was 19.9 for participating dentists which compares closely to the average (20.14) for the SHSSB area.</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): Patients were randomised by whole sessions</p> <p><b>Report how confounding factors were minimised:</b> No statistically significant baseline differences were reported. Contamination was minimised as patients were allocated by timed sessions.</p> <p><b>Programme/Intervention description:</b> <b>What was delivered:</b> PIL was given to be read and then collected and a questionnaire given to complete. Four questions on socio-demographic characteristics were included in the questionnaire. Scales to assess knowledge of oral cancer, and perception of risk were included</p> <p><b>Theoretical basis:</b> NR</p> <p><b>By whom:</b> Trained Interviewers</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> PIL was given including factual information on the signs and symptoms of oral cancer, risk factors, prevalence</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Knowledge of oral cancer</p> <p><b>Outcome definition:</b> Knowledge of oral cancer</p> <p><b>Outcome measure:</b> questionnaire</p> <p><b>Outcome measure validated:</b> Yes</p> <p><b>Unit of measurement:</b> percentage of correct responses</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name:</b> Risk perception</p> <p><b>Outcome definition:</b> Perceived risk of mouth cancer</p> <p><b>Outcome measure:</b></p>	<p>For each outcome report</p> <p><b>Means, SDs, p-values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b></p> <p><b>Behavioural results:</b></p> <p>Knowledge of oral cancer</p> <p>Intervention group: Mean: 28.51 95% CI: 28.15, 28.87</p> <p>Control group: Mean: 26.49 95% CI: 26.14, 26.84;</p> <p>All respondents who received the PIL reported greater knowledge than those who did not receive the PIL <math>F[1,932]= 62.43, p&lt;0.001</math></p> <p>NOTE: additional information comparing</p>	<p><b>Limitations identified by author:</b> The level of participation was high in the study although of those who refused there was an overrepresentation of older people.</p> <p>Self-reports of tobacco smoking have a tendency to under report.</p> <p>There are numerous approaches to estimate risk and for a more comprehensive understanding of the place that smoking can influence perception of risk no single method should be preferred.</p> <p><b>Limitations identified by review team:</b> Only difference between refusers and responders was a slight difference in age.</p> <p>Allocation to condition</p>

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<p>Parallel A randomised control design was employed. Patients were randomised by whole sessions so that all attendees in a single session (defined as the typical period when the practice was open for a series of patients) were allocated to either the PIL or no PIL condition. This feature of the design was deliberate to avoid 'contamination' within a session when individuals were randomised.</p> <p><b>Quality Score (++, +, or -):</b> ++</p> <p><b>External Validity</b>(++, +, or -): ++</p>	<p><b>Location</b> (urban or rural): NR</p> <p><b>Sample characteristics:</b> NR</p> <p><b>Age:</b> Mean (SD) age 42 years (of the 944). Range 18-86</p> <p><b>Sex:</b> Male 332, female 612 (out of the 944 completers)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education</b> - Completed full time education: ≤ 16 years: Intervention= 196 (45%); Control= 203 (47%); 17-18 years: Intervention= 138 (32%); Control= 140 (32%); ≥ 19 years: Intervention= 93 (23%) Control= 93 (21%)</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p>	<p>and mortality rates and behaviours to reduce risk and promote early detection. A questionnaire was then administered.</p> <p><b>When/where:</b> General dental practices</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> One day</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Questionnaire</p> <p><b>By whom:</b> Trained Interviewers</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> A questionnaire was administered.</p> <p><b>When/where:</b> General dental practices</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> One day</p> <p><b>Sample size at baseline:</b> NR</p> <p><b>Total sample N</b> = 967 (complete data was received from 944 participants)</p> <p><b>Intervention group N</b> = 480 (13 uncompleted) = 467 completed replies.</p> <p><b>Control Group N</b> = 487 (10 uncompleted) = 477 completed replies</p> <p><b>Baseline comparisons</b> (report</p>	<p>questionnaire</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> percentage of correct responses</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): ANOVA was used to analyse the results for knowledge of oral cancer. Chi-square statistics were adopted to analyse the risk perception outcome. Multiple logistic regression was used to predict a higher risk perception, with smoking behaviour, receipt of the leaflet, smokes</p>	<p>intervention and control scores for different questions is contained in the Data Extraction form.</p> <p>There was no overall difference in knowledge scores across the smoking classification regardless of whether respondents had read the PIL or not (<math>F[2,932] = 2.39, p=0.092</math>). the interaction of smoking status with experimental condition was significant (<math>F[1,932]=3.02, p= 0.049</math>).</p> <p>The median percent improvement due to the PIL was 4 (min, max:) 13, 36; IQR=9.8). In 2 previous studies with the 'Mouth Cancer: are you at risk?' PIL produced by ZilaTM Europe the equivalent median values were 10 (min, max: 3, 40;</p>	<p>was completed by randomisation by whole session.</p> <p>Not all items from the questionnaire were included.</p> <p>It was not recorded whether the person(s) determining allocation to condition could have influenced this process.</p> <p>It was not recorded whether the participants and investigators were blind to the aims and outcomes of the research.</p> <p>It was not recorded whether the exposure to the intervention or control group was adequate.</p> <p>Attrition rates were less than 20%.</p> <p>The intervention only partially reflected the usual UK practice as it was administered by trained interviewers.</p>

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	<p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Patients were randomised by whole sessions</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> Mean Noble deprivation index of the sample compares closely with the average of the area</p> <p><b>Inclusion Criteria:</b> Subjects aged 16 years or above, having given written consent and English language spoken.</p> <p><b>Exclusion Criteria:</b> Visitors to the practice or relatives</p>	<p>any baseline differences between groups in important confounders): The randomisation procedure successfully achieved equivalence between experimental and control groups, as age, gender, self-reported behaviour (dental attendance, tobacco and alcohol use), and previous quit attempts were found not to be statistically different between groups (all <math>p&gt;0.05</math>).</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): NR</p>	<p>and previous smoking behaviour as independent variables. Use of ITT was not mentioned.</p>	<p>IQR=15.2) and 14 (min, max: 0, 35; IQR=14.8) respectively.</p> <p>Risk perception – perceived risk of oral cancer</p> <p>Of the 467 patients with access to the PIL, 49 perceived their risk of mouth cancer as higher than others (11%), whereas 33 of the 477 control patients (7%) held this view. The effect of the PIL on perceptions of risk was marginally significant (<math>\chi^2 = 3.80</math>, df1, <math>p = 0.051</math>) regardless of smoking level. There was an enhancement of risk perception in smokers, as 34% (37/110) who had read the PIL believed they were at risk compared to 22% (23/106) of the controls (<math>\chi^2 = 3.84</math>, df1, <math>p = 0.05</math>). The effects of the PIL on</p>	<p>Not all of the outcome measures were reliable.</p> <p>Not all questionnaire results were reported.</p> <p>Not all outcomes were accessed only the knowledge and attitudes.</p> <p>Follow-up in the form of a questionnaire was given directly after the leaflet.</p> <p>Intervention group and control group were not similar at baseline.</p> <p>ITT was not recorded.</p> <p>The estimates of effect size were shown sometimes with a p value.</p> <p>It was not reported whether the analytical methods were appropriate.</p> <p>Some p values were given when considering the precision of the intervention effects that</p>

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	<p>of patients were excluded.</p> <p><b>% of selected individuals agreed to participate:</b></p> <p>28 refusals (response rate 97%): lack of interest (8), insufficient time (8), non-possession of glasses (4) other (8)</p> <p>23 uncompleted after randomisation.</p> <p><b>Potential sources of bias:</b> NR</p>			<p>those who used to smoke and had never smoked was not significant statistically (<math>\chi^2 = 1:04</math>, df1, <math>p = 0:31</math> and <math>\chi^2 = 1:79</math>, df1, <math>p \approx 0:18</math> respectively). These results are presented in Fig. 1 – p.920</p> <p>Multiple logistic regression was performed with risk as the dependent variable. Risk was dichotomised into those who perceived themselves at greater risk (coded 1) against those who believed they were at the same or less risk (coded 0). 4 factors were introduced into the model, 3 as categorical predictors including PIL access (or not), smoking behaviour (3 levels: smoker, past smoker and never smoked) and sex. Age was entered as a continuous variable. The 2 demographic</p>	<p>were given.</p> <p>The data from this study has only partial internal validity.</p> <p><b>Evidence gaps:</b> To design more effective communications, to demonstrate that the increase in personal vulnerability that smokers expose themselves, will depend, in part, on researchers developing good systems of measurement of risk perception.</p> <p><b>Source of funding:</b> NR</p>

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				<p>variables (age and sex) were found not to contribute to risk perception and hence were omitted <math>\beta &gt; 0:05</math>. The 2 remaining variables: PIL access and smoking behaviour each had an independent effect on risk perception adjusted for the other <math>\beta &lt; 0:05</math>. The smokers were 16 (95% CI: 8–30) times more likely to perceive they were at greater risk of oral cancer than the nonsmokers</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control): 28 refusals (response rate 97%): lack of interest (8), insufficient time (8), non-possession of</p>	

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				<p>glasses (4) other (8) 23 uncompleted after randomisation.</p> <p><b>Conclusion:</b> This study extends previous work to show that first, minimal interventions such as PILs can be effective in raising awareness about signs and symptoms of oral cancer in patients attending their dentist and this effect is linked to smoking behaviour. Secondly, perceptions of risk are closely associated with current self-reported tobacco smoking. Finally, a PIL may marginally increase risk perception of oral cancer and this may be partially dependent on smoking status.</p>	

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<p><b>Author:</b> Humphris, G.M. and E.A. Field</p> <p><b>Year:</b> 2003 (Paper One) 2004 (Paper Two)</p> <p><b>Citation:</b> Humphris, G.M. and E.A. Field, The immediate effect on knowledge, attitudes and intentions in primary care attenders of a patient information leaflet: a randomised control trial replication and extension. <i>British Dental Journal</i>, 2003. 194(12): p. 683-8; discussion 675 (Paper One).</p> <p>Humphris, G.M. and E.A. Field, An oral cancer information leaflet for smokers in primary care: results from 2</p>	<p><b>Source Population(s):</b> Practices were selected from areas of the north west of England that were situated in a wide ranging set of localities.</p> <p><b>Setting:</b> 16 practices (9 dental, 7 medical) within Merseyside from a wide ranging set of localities. Deprivation has been highlighted as a key variable in predicting various aspects of oral health<sup>11,12</sup> and is often expressed as a summary measure known as the Townsend index.<sup>13</sup></p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Mean age for leaflet group = 42.63 Mean age for no</p>	<p><b>Method of allocation</b> (Describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): Pseudo randomisation - whole sessions were allocated to either group.</p> <p><b>Report how confounding factors were minimised:</b> Baseline imbalances were inspected and found not to be significant with the exception of gender. Gender was controlled for in the analysis. Allocation was not concealed but contamination should have been minimal as groups rather than individuals were randomised.</p> <p><b>Programme/Intervention description:</b> Leaflet group</p> <p><b>What was delivered:</b> After obtaining consent, the patients in the experimental group were given the leaflet to read and return to the researcher. All participants completed the questionnaire:</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Interviewers recruit</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name: 1)</b> Knowledge of oral cancer</p> <p><b>Outcome definition:</b> Knowledge level</p> <p><b>Outcome measure:</b> Responses to 36 attitude statements (self-reporting by patient)</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Yes / no or true / false answers</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name: 2)</b> Attitudes about negative consequences</p>	<p><b>1)</b> Knowledge of oral cancer</p> <p>Detailed results for the top 10 of 36 statements are contained in Table 4 of Paper 1 and in an outcome table in the data extraction form</p> <p>Intervention – leaflet group: Mean: 30.87 Standard error: 0.18 95% CI: 30.51-31.24</p> <p>Control – no leaflet group: Mean: 26.11 Standard error: 0.19 95% CI: 25.73-26.48</p> <p>P Level: 0.001 Effect size: 1.29</p> <p>The most significant effect of reading the leaflet was upon knowledge level (<math>t = 17.85</math>, <math>df = 767</math>, <math>P &lt; 0.001</math>). Almost five extra question items (mean = 4.77, 95%CI = 4.24, 5.29) were correctly answered, on average, after access to the leaflet.</p> <p>Paper Three – results for Outcome 1) by smokers and non-smokers:</p>	<p><b>Limitations identified by author:</b></p> <p>Paper One: Some limitations of the study are noted. Participation rate was high although drop-out analysis indicated older members of the practice refused. In addition, some patients who consented did not complete the full questionnaire. However, the extent of the loss was similar across the experimental and control groups thereby reducing the possibility of bias. Caution should be employed when generalising more widely beyond the North West of England, although there was no association of practice (and indirectly deprivation) with knowledge level. It is worth noting that</p>

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<p>randomised controlled trials.</p> <p>Community Dentistry and Oral Epidemiology, 2004. 32(2): p. 143-9. (Paper Two)</p> <p>[NOTE: This paper also reports results from a separate study – these are dealt with in a separate evidence table - Humphris et al 2001]</p> <p><b>Country of study:</b> England</p> <p><b>Aim of Study:</b> Paper One: To determine whether the influence of a leaflet on mouth cancer improves knowledge, related attitudes and intention to accept a mouth screen.</p> <p>Paper Two: To investigate whether primary care patients who</p>	<p>leaflet group = 42.76</p> <p><b>Sex:</b> Leaflet group = 55.6% female, 44.4% male</p> <p>No leaflet group = 62.1% female, 37.9% male</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Trained interviewers arrived at the practices on days where non-specialist, that is routine services, were provided. Session allocation was previously</p>	<p>participants. Leaflet gives message - produced by Zila Europe</p> <p><b>To whom:</b> 428 patients</p> <p><b>How delivered:</b> The leaflet contained pictorial, diagnostic and textual information, presented under headings designed in a question and answer format on a multi-coloured, double-sided, glossy A4 sheet, folded to provide 6 sections. The leaflet scores highly (11 out of a possible maximum of 13) on the new evaluation system for patient information sheets (MIDAS).</p> <p><b>When/where:</b> Dental or medical practice – waiting room</p> <p><b>How often:</b> Once – questionnaire immediately followed leaflet administration</p> <p><b>How long for:</b> One day</p> <p><b>Control/Comparator description:</b> No leaflet group</p> <p><b>What was delivered:</b> All participants completed the questionnaire:</p> <p><b>By whom:</b> Interviewers recruit participants.</p> <p><b>To whom:</b> 433 patients</p> <p><b>How delivered:</b> N/A</p> <p><b>When/where:</b> Dental or</p>	<p><b>Outcome definition:</b> Attitudes about negative consequences</p> <p><b>Outcome measure:</b> Responses to 2 attitude statements - five point Likert scale – from 'strongly agree' to 'strongly disagree' (self-reporting by patient)</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Likert score</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name:</b> 3) Attitudes about lack of control</p> <p><b>Outcome definition:</b> Attitudes about lack of control</p> <p><b>Outcome measure:</b> Responses to 2 attitude statements - five point Likert scale – from 'strongly agree' to 'strongly disagree' (self-</p>	<ul style="list-style-type: none"> <li>There was a small overall difference in knowledge across the smoking classification regardless of whether respondents had read the leaflet [smokers= 28.01, 95%CI: 27.52, 28.49; non-smokers= 28.61, 95% CI: 28.30, 28.92; <math>F(1, 778)=4.17</math>, <math>p&lt;0.0048</math>.</li> <li>The interaction of smoking status with experimental condition was significant (<math>F[1, 778]= 10.32</math>, <math>p&lt;0.001</math>)</li> <li>Amongst respondents without access to the leaflet (control group) it was found that smokers had lower levels of knowledge than nonsmokers (mean=25.06, 95%CI: 24.35, 25.77; and mean= 26.54, 95%CI: 26.08, 27.01, respectively).</li> <li>Respondents who</li> </ul>	<p>the study describes only the immediate effect of the leaflet and further work has started to shed light on the longer term effects.</p> <p><b>Paper Two:</b> The limitations of these studies bear inspection. First, we adopted self-report to categorise the patients' smoking status rather than continue testing. This later approach would have raised the costs of the study considerably. Further, as the correlation between self-report and continue testing is very high particularly when demand characteristics of the question are low (anonymous questionnaire), as in this case, a second limitation was that a post-test only design was employed.</p>

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<p>claim to smoke tobacco gain greater benefit of a patient information leaflet on oral cancer than non-smokers.</p> <p><b>Study Design:</b> Parallel RCT</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>recorded from random number computer generated assignment. Instructions included advice to continue practice visits until 25 patients from each study condition had been successfully collected. Surplus participants (i.e. &gt; 25 per condition) were included.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> The Townsend indices associated with the locality from which the practice resided at ward level were comparable (mean = 4.35; SD = 4.73) to the values for Merseyside (mean = 3.68; SD = 4.56). Waiting rooms.</p>	<p>medical practice – waiting room</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> One day</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 861</b></p> <p><b>Intervention group N = 428</b></p> <p><b>Control Group N = 433</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): Slightly higher percentage of females in the no leaflet group (62.1%) compared to leaflet group (55.6%). The randomisation procedure successfully achieved equivalence between experimental and control groups, as age, gender and setting of the waiting room (dental or medical) were found not to be statistically different between groups (all <math>p</math> values&gt;0.05).</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>	<p>reporting by patient)</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Likert score</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name:</b> <b>4</b></p> <p>Normative beliefs</p> <p><b>Outcome definition:</b> The assessment of beliefs about whether other people would sanction the respondent to accept a mouth cancer screen.</p> <p><b>Outcome measure:</b> Tapped using 3 pairs of items which each consisted of 2 statements. A strongly agree/strongly disagree 5 point likert scale was used for each item of the pair. Both items in the pair were multiplied to derive a product ranging from 1 to 25. All 3 pairs</p>	<p>had read the leaflet had similar levels of knowledge regardless of smoking status (smokers: mean=31.07, 95% CI: 30.40, 31.73; nonsmokers: mean=30.72, 95% CI: 30.29, 31.15)</p> <ul style="list-style-type: none"> <li>• ANOVAs were also undertaken to check the effects of self-reported regularity of dental attendance and alcohol consumption (controlling for age) which found no significant effects.</li> <li>• Additional information on specific items of knowledge is available in the data extraction form.</li> </ul> <p><b>2) Attitudes about negative consequences</b></p> <p>Intervention – leaflet group: Mean: 3.73 Standard error: 0.08 95% CI: 3.57-3.88</p>	<p>Previous work, however, by our group suggests that the advantage of a more complex, pre-test design, especially in a primary care setting, might be marginal. Third, the external validity of the findings, that is generalisability, should be treated with some caution. Randomisation was conducted by session rather than by individual. In addition both studies were conducted in the North West of the UK. Study 1 [the study reviewed with Hugoson et al 2001] however confirmed that the variation of deprivation level was independent of mean knowledge level for the participating patients at the range of practices sampled.</p> <p><b>Limitations identified by review</b></p>

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	<p><b>Inclusion Criteria:</b> Inclusion criteria were to invite all consecutively attending patients who spoke English, and were 16 years of age or above.</p> <p><b>Exclusion Criteria:</b> Visitors to the practice or relatives of patients were excluded.</p> <p><b>% of selected individuals agreed to participate:</b> A total of 949 patients were approached, of whom 88 refused, so approximately 91% accepted. The refusals were of similar gender composition to the respondents (<math>\chi^2 = 1.65</math>; df = 1; <math>P = 0.2</math>). Age level of refusals was higher than respondents (<math>\chi^2 = 39.97</math>; df = 5; <math>P &lt; 0.001</math>).</p>		<p>were summed to produce a scale ranging from 3 to 75.</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Likert score</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Outcome name: 5)</b> Anxiety about screening procedure</p> <p><b>Outcome definition:</b> Anxiety about having a mouth screen.</p> <p><b>Outcome measure:</b> Comprised 3 items which were summed to give a scale ranging from 3 to 15 (low to high anxiety).</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Score on a 5 point rating scale</p> <p><b>Time points measured:</b> End of</p>	<p>Control – no leaflet group: Mean: 3.97 Standard error: 0.08 95% CI: 3.81-4.13</p> <p><i>P</i> Level: 0.038 Effect size: 0.15</p> <p>Paper Two <i>t</i>-test results for the impact of the leaflet on smokers and non-smokers: Will give discomfort (reverse scored):</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.11; 95% CI= 0.06-0.28; <i>p</i>=0.204</li> <li>Smokers: effect size=0.11; 95% CI= 0.17-0.39; <i>p</i>=0.439</li> </ul> <p>A waste of time (reverse scored):</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.01; 95% CI= 0.16-0.18; <i>p</i>=0.939</li> <li>Smokers: effect size=0.03; 95% CI= 0.25-0.31; <i>p</i>=0.816</li> </ul> <p><b>3) Attitudes about lack of control</b></p> <p>Intervention – leaflet group: Mean: 7.67 Standard error: 0.09</p>	<p><b>team:</b></p> <p>Only pseudo-randomisation was used (whole sessions were allocated to each group).</p> <p>Not all questions in the questionnaire were included in the report (however - this was partly because they were grouped under different outcomes).</p> <p>There was no information on whether the allocation was concealed and whether blinding was used.</p> <p>The figures for drop-out rates in the 2 papers are different and there is no explanation for this.</p> <p>The questionnaire was given directly after the leaflet so the follow-up time was not meaningful.</p>

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	<b>Potential sources of bias:</b>		<p>intervention</p> <p><b>Outcome name:</b> 6) Intention to accept screen</p> <p><b>Outcome definition:</b> Intention to accept screen</p> <p><b>Outcome measure:</b> Assessed with 2 questions. A 7 point scale was applied to both questions.</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Score on 7 point scale</p> <p><b>Time points measured:</b> End of intervention</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p> <p>Outcome 1 (knowledge of oral cancer) was</p>	<p>95% CI: 7.49-7.86</p> <p>Control – no leaflet group: Mean: 7.91 Standard error: 0.09 95% CI: 7.72-8.10</p> <p><i>P</i> Level: 0.078 Effect size: 0.13</p> <p>Paper Two <i>t</i>-test results for the impact of the leaflet on smokers and non-smokers: Easy to ask for Mouth Cancer Check if I wanted to have:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.12; 95% CI=0.05-0.29; <i>p</i>=0.155</li> <li>Smokers: effect size=0.14; 95% CI=0.14-0.42; <i>p</i>=0.325</li> </ul> <p>Able to decide to allow dentist to give Mouth Cancer Check:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.05; 95% CI=0.12-0.22; <i>p</i>=0.544</li> <li>Smokers: effect size=0.19; 95% CI=0.08-0.47; <i>p</i>=0.168</li> </ul> <p>4) Normative beliefs</p> <p>Intervention – leaflet group:</p>	<p><b>Evidence gaps:</b></p> <p>Paper One: Questions remain unanswered however, including: what is the duration of the effect of this written information, and what implications does the improvement have on patient and dentist behaviour?</p> <p>Paper Two: An issue that warrants further investigation is the extent that introducing written materials, similar to the patient information leaflet used in this study, may influence clinician behaviour.</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			assessed using chi-squared. All other outcomes were assessed using <i>t</i> -tests.	<p>Mean: 12.51 Standard error: 0.24 95% CI: 12.03-12.99</p> <p>Control – no leaflet group: Mean: 13.34 Standard error: 0.25 95% CI: 12.84-13.83</p> <p><i>P</i> Level: 0.019 Effect size: 0.17</p> <p>Mouth Cancer Check gives early diagnosis of mouth cancer:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.10; 95% CI=-0.07-0.27; <i>p</i>=0.266</li> <li>Smokers: effect size=0.04; 95% CI=-0.24-0.32; <i>p</i>=0.778</li> </ul> <p>Will reassure me:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.04; 95% CI=-0.13-0.21; <i>p</i>=0.619</li> <li>Smokers: effect size=0.30; 95% CI=0.02-0.58; <i>p</i>=0.032</li> </ul> <p><b>5) Anxiety about screening procedure</b></p> <p>Intervention – leaflet group: Mean: 5.23</p>	

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				<p>Standard error: 0.13 95% CI: 4.97-5.50</p> <p>Control – no leaflet group: Mean: 5.58 Standard error: 0.13 95% CI: 5.31-5.85</p> <p><i>P</i> Level: 0.069 Effect size: 0.13</p> <p>Affective response to Mouth Cancer Check - Anxiety:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.06; 95% CI=-0.11-0.23; <i>p</i>=0.480</li> <li>Smokers: effect size=0.11; 95% CI=-0.17-0.39; <i>p</i>=0.428</li> </ul> <p>Affective response to Mouth Cancer Check - Worry:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.05; 95% CI=-0.12-0.22; <i>p</i>=0.552</li> <li>Smokers: effect size=0.24; 95% CI=-0.04-0.52; <i>p</i>=0.087</li> </ul> <p>Affective response to Mouth Cancer Check - Concern:</p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.02; 95% CI=-0.15-0.19; <i>p</i>=0.812</li> <li>Smokers: effect size=0.32; 95%</li> </ul>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>CI=0.04-0.60; p=0.24</p> <p><b>6) Intention to accept screen</b></p> <p>Intervention – leaflet group: Mean: 12.15 Standard error: 0.12 95% CI: 11.91-12.39</p> <p>Control – no leaflet group: Mean: 11.61 Standard error: 0.12 95% CI: 11.36-11.86</p> <p><i>P</i> Level: 0.003 Effect size: 0.22</p> <p>Intention to accept a screen was more positive in patients who had read the leaflet (<math>t = 3.02</math>, <math>df = 759</math>, <math>P = 0.003</math>). The strength of the effect was low (mean difference = 0.43, 95%CI = 0.10, 0.78, <math>d = 0.22</math>). Bonferroni adjustment indicated with 6 tests that the significance level should be altered to 0.008.</p> <p>Paper Two <i>t</i>-test results for the impact of the leaflet on smokers and non-smokers: Intention to have a Mouth</p>	

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				<p><b>Cancer Check:</b></p> <ul style="list-style-type: none"> <li>Non-smokers: effect size=0.21; 95% CI=0.04-0.38; <math>p=0.017</math></li> <li>Smokers: effect size=0.21; 95% CI=-0.06-0.49; <math>p=0.126</math></li> </ul> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>53 incomplete questionnaires from the no leaflet group 39 incomplete questionnaires from the leaflet group.</p> <p>Data with full information was analysed leaving 769 respondents. The number of dropouts due to missing data was independent of group assignment (<math>\chi^2 = 2.57</math>, <math>P = 0.13</math>).</p> <p><b>Conclusion:</b> Paper One:</p>	

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				<p>The findings from this study confirm previous reports in 2 respects. First, the improvement in knowledge from access to the leaflet was about the same in the current and previous survey (see Humphris 2001 x3 papers).</p> <p>The intention of patients to accept an oral cancer screen was increased with access to the leaflet. The leaflet did appear to have an influence on the beliefs of patients about the difficulties associated with having an oral cancer check.</p> <p>However anxiety about the screening procedure was not influenced by the leaflet exposure unlike in the original study (see Humphris x2 2001).</p> <p>This study supports previous work by the authors in confirming the strength of effect of a well-designed information leaflet. The main influence was to increase knowledge about signs and associated risks of oral cancer.</p>	

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				<p>Paper Two:</p> <p>As predicted the smokers with access to the leaflet were significantly more reassured and less anxious about having an oral health screen. The effect on behavioural intentions was in a positive direction consistent with prediction but statistically nonsignificant. Non-smokers in comparison showed statistically significant enhanced intentions but not other advantage with leaflet exposure.</p> <p>Smokers were reporting identical knowledge levels to their non-smoking counterparts, but only when having read the leaflet. Without access to the leaflet, patients who smoked were not as knowledgeable about oral cancer.</p>	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> Jensen, O et al</p> <p><b>Year:</b> 2014</p> <p><b>Citation:</b> Jensen, O., et al., 'I take for granted that patients know' - oral health professionals' strategies, considerations and methods when teaching patients how to use fluoride toothpaste. International Journal Of Dental Hygiene, 2014. 12(2): p. 81-88.</p> <p><b>Country of study:</b> Sweden</p> <p><b>Quality Score (++, +, or -):</b> ++</p>	<p><b>Study design:</b> Qualitative approach using focus group interviews.</p> <p><b>Research aims, objectives, and questions:</b> The aim of this study was to explore the oral health professionals' (OHPs') perspectives regarding their strategies, considerations and methods when teaching their patients the most effective way of tooth brushing with fluoride (F) toothpaste (abstract).</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b></p> <p><b>State how data were collected:</b></p> <p><b>What method(s):</b> Data were collected through five focus group interviews. Each group consisted of at most 6 OHPs with different educational backgrounds, gender and number of years in profession. The first focus group included OHPs working with an oral health promotion programme in schools. The second and third groups represented OHPs working in a Public Dental Service in the Gothenburg Region and the county of</p>	<p><b>Population the sample was recruited from:</b> Oral Health Professionals (OHPs) from two Swedish regions.</p> <p><b>How sample was recruited:</b> The participants were selected through purposive sampling, meaning that the selection is based on knowledge of the population and the purpose of the study. Thus, in order to establish credibility, OHPs of different gender, professions and professional backgrounds were chosen. (p.82, pa.6)</p> <p><b>How many participants recruited:</b> 23</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> 18 women and five men</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Sweden</p> <p><b>Occupation:</b> 10 dental nurses, four dental hygienists and nine</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>The analysis of the interviews was based on qualitative content analysis. 2 of the authors (PG, OJ) made the first analysis of the transcribed interviews, and all the authors contributed at a later stage to the analysis of the texts. The analysis began with the authors reading the interviews thoroughly several times until they were familiar with the texts. Statements about knowledge, attitudes and behaviour were marked in the text. The statements were compared to find both similarities and differences. The data were systematically condensed and coded to the relevant phrases that identified their content. The following steps were performed in the analytical process:</p> <p>1 Meaning units were identified, that is, statements relating to the same central meaning.</p> <p>2 Abstractions were made, that is, interpretation at a higher level of logic.</p> <p>3 Codes were created, that is, meaning units labelled.</p> <p>4 Codes were sorted into subcategories and categories, that is, a group of content sharing a commonality.</p> <p>3 of the researchers (PG, OJ, LP)</p>	<p><b>Limitations identified by author:</b></p> <p>A disadvantage of group interviews is the possibility that individual experience will not be fully explored. (p.86, pa.5)</p> <p><b>Limitations identified by review team:</b></p> <p>Paper does not state whether role of researcher was described to participants.</p> <p>Only one method used (focus group interviews) – in focus groups not always possible to gain individual opinions in full/have a representation of all the views of those in attendance.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>NR</p> <p><b>Source of funding:</b></p> <p>The study was financially supported by the Public Dental Service of the</p>

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	<p>Uppsala, respectively, treating patients from different socio-economic areas. The fourth group represented OHPs working in a private dental clinic in the county of Uppsala, and the fifth group represented dentists working as heads of Public Dental Services in the county of Uppsala (p.82, para.6)</p> <p>An interview guide was used with questions about background data on the informants' professions and number of years in the profession. Open-ended questions were used to collect data concerning the informants' strategies when teaching patients how to brush their teeth and how to use F toothpaste, for example, Can you tell me about your recommendations and instructions about use of fluoride toothpaste to the patients? Follow-up questions were asked when necessary.</p> <p>The intention was to explore the OHPs' knowledge of and attitudes about caries prevention and what they said to their patients concerning to use the best 'toothpaste'</p>	<p>dentists. (p.82, para.6).</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p>discussed the tentative subcategories and categories, and the division was revised until a consensus could be achieved. Both the manifest and the latent areas were grounded in the data by selection of exploratory text quotations. (p.83, para.3)</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>(p.83-86)</p> <p>3 categories were identified in the manifest and latent analysis: (i) strategies and intentions, (ii) providing oral hygiene information and instruction and (iii) barriers to optimal oral health teaching. Each category consisted of 2 subcategories</p> <p><b>Strategies and intentions:</b>  <i>Promoting oral health for the best interest of the patient:</i></p> <ul style="list-style-type: none"> <li>- For several participants, priority was given to instructing patients with oral diseases. However, others felt that all patients need advice on oral health.</li> <li>- Patients own responsibility for good oral health habits was stressed.</li> <li>- Participants highlighted that they listen to the patient's attitude to earn their confidence and learn about their abilities.</li> </ul>	<p>Vastra Gotaland Region, Sweden. (p.87, para.6)</p>

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	<p>technique'. Discussion focus was on the informants' own descriptions of teaching and their thoughts, feelings and actions concerning the subject. With the aim of stimulating the discussion, the moderator referred to findings from a previous study where patients had been interviewed about what they knew about toothbrushing' and toothpaste. 3 quotations, 'vignettes', were presented to the focus groups, each representing statements made by dental patients in the abovementioned study. Vignettes can be a useful way to more clearly identify the phenomena to be discussed. The vignettes were as follows: (i) 'The dental care services don't teach you how to use toothpaste...you put it on and you brush', (ii) 'Some people do say you aren't supposed to rinse... But I don't know whether that's a good idea... no dentist has ever told me not to rinse it off...' and (iii) '...but you have no idea which toothpaste really works. ... You can only find out from a (company and brands) neutral dentist ...you don't listen to the message if there is a company logo on it'.</p>		<ul style="list-style-type: none"> <li>- Keen to give both positive and negative feedback and not blame the patient: “ <i>...I guess I try to find a way that's easy for the patient too, because you mustn't make it too complicated</i>”</li> </ul> <p><i>Working for one's own sake:</i></p> <ul style="list-style-type: none"> <li>- Some OHP's expressed a need to succeed for their own' sake (as well as the patient).</li> <li>- Experienced satisfaction when patients improved their oral health</li> </ul> <p><i>Providing oral hygiene information and instruction:</i></p> <p><i>Advice on oral hygiene:</i></p> <ul style="list-style-type: none"> <li>- Focussed more on toothbrushing techniques rather than toothpaste.</li> <li>- Advice to brush twice a day for 2 mins (although for some 2 mins was too short)</li> <li>- Some mentioned toothpaste technique and/or fluoride concentration as part of their advice.</li> <li>- Some informed patients (more so children) about not rinsing after brushing</li> <li>- Some recommended toothpaste brands (particularly if patient had specific problems such as sensitive teeth) but it was considered even more important not to favour any specific company</li> <li>- The informants were of the opinion that patients of all ages were affected by advertisements, as</li> </ul>	

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	<p>The interviews were digitally recorded and later transcribed verbatim by a professional secretary and one of the authors.</p> <p>The interviews were performed and transcribed in Swedish. A professional translator translated the quotations into English. (p.82, para.7....)</p> <p><b>By whom:</b> The interviews were performed by a moderator (author, dentist) and an observer (author, dental hygienist). (p.82, para.7)</p> <p><b>What setting:</b> The interviews took place at dental clinics or conference centres in Gothenburg and Uppsala. (p.82, para.7)</p> <p><b>When:</b> NR</p>		<p>were the OHPs themselves.</p> <p><i>Methods used for instruction:</i></p> <ul style="list-style-type: none"> <li>- 4 aspects, knowledge, guidelines, aids and time, were seen as essential in terms of giving advice on brushing and F toothpaste.</li> <li>- The OHPs expressed uncertainty and showed lack of knowledge about the most effective F toothpaste technique, saying that they handled this issue unsystematically. Some informants also expressed dissatisfaction with the changes of recommendations over time indicating that this created uncertainty.</li> <li>- The informants discussed the issue of time as a prerequisite for giving oral hygiene advice. Their opinion was that dental nurses had the most time available for preventive care and dentists the least time.</li> <li>- It was also stated that dental nurses give the highest quality information and instructions.</li> </ul> <p><i>Barriers to optimal oral healthcare education:</i></p> <p><i>Obstacles related to the patients:</i></p> <ul style="list-style-type: none"> <li>- Opinion was that patient's social status not least the patient's level of education, could both facilitate and present an obstacle to providing optimal information.</li> <li>- Some mentioned difficulties in giving instruction to elderly patients or patients from different cultural</li> </ul>	

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			<p>backgrounds.</p> <p><i>Obstacles related to the oral health professionals:</i></p> <ul style="list-style-type: none"> <li>- If the patient has been attending the same clinic or being treated by the same OH Professional for many years, then it felt hard to tell the patient that his or her oral hygiene was inadequate and improvements needed.</li> <li>- Teenagers were described as more careless with their oral hygiene, and older men were stated to be difficult to motivate to change their habits.</li> <li>- Some informants had even doubts about the advantages of F toothpaste because using toothpastes without abrasives to avoid tooth wear was more frequently given advice than using a large amount of toothpaste for adding F to the oral cavity. Doubt was also expressed about whether F is a safe product or if it causes fluorosis on the teeth of young children. In addition, the informants seemed to be embarrassed to talk about something as self-evident as toothpaste.</li> </ul> <p><b>Conclusions:</b></p> <p>In conclusion, the OHPs seemed to be driven by good intentions towards their patients, but their behaviour was affected by events beyond their control, which could lead to their omitting</p>	

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			<p>information. The OHPs in this study showed limited knowledge regarding F toothpaste. They described toothbrushing with F toothpaste as very important, but focussed on plaque removal. They also spoke less about F toothpaste because they took for granted that their patients' knowledge of and behaviour concerning toothpaste were already in place. The benefits of F toothpaste use for the general population have strong scientific support, and efforts should be made to spread knowledge and appropriate habits. (p.87, para.4)</p> <p>Clinical relevance:  Programmes for oral health promotion and education can increase individual's knowledge of and attitudes towards oral health and can improve oral health behaviour. OHPs are considered to be the main source of knowledge regarding oral health. In this study, OHPs believed that patients used other sources to obtain knowledge about oral health and they even took it for granted that patients already have the knowledge. In their preventive work, the OHPs should recognise their role as oral health promoters with the purpose of teaching patients the most effective methods for self-care. (p.87, para.5)</p>	

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<p><b>Author:</b> Jonsson B, Ohrn K, Oscarson N, Lindberg P</p> <p><b>Year:</b> 2009</p> <p><b>Citation:</b> Jönsson, B., et al., The effectiveness of an individually tailored oral health educational programme on oral hygiene behaviour in patients with periodontal disease: a blinded randomised-controlled clinical trial (one-year follow-up). <i>Journal of Clinical Periodontology</i>, 2009. 36(12): p. 1025-1034 (Paper One)</p> <p>Also:</p> <p>Jönsson, B., et al., Evaluation of an individually tailored oral health educational</p>	<p><b>Source Population(s):</b> Participants were recruited among subjects with moderate to advanced periodontitis referred to the clinic and examined during the period March 2006-March 2007. The subjects were referred from both public and private dentistry.</p> <p><b>Setting:</b> The study was conducted in at a specialist clinic for periodontics in a Swedish county with approximately 320,000 inhabitants.</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Intervention group mean age = 52.4 (SD=8.4) Control group mean</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): No information on how exactly it was randomised.</p> <p><b>Report how confounding factors were minimised:</b> Allocation was concealed but the issue of contamination was not explicitly addressed and it does appear possible that contamination could have taken place. The article states that there were "no statistically significant differences in the demographic variables or background characteristics between the groups".</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> The programme comprised seven separate components with different tactics for tailoring each individual's personal goals regarding oral health and dental hygiene habits: i) initiation and analysis of knowledge ii) analysis of oral</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Gingival Index Global</p> <p><b>Outcome definition:</b> The presence of gingival inflammation was recorded according to the criteria for the gingival index (GI) of Loe &amp; Silness (1963). Both plaque index and gingival index were recorded on the buccal, lingual, mesial and distal tooth surfaces of the teeth.</p> <p><b>Outcome measure:</b> Gingival index (GI) of Loe &amp; Silness (1963)</p> <p><b>Outcome measure validated:</b> As both the Gingival and Plaque Indexes are well established in the clinical practice of the examiner there was no calibration before the study. However intra-observability reliability</p>	<p><b>Oral health (clinical) results:</b></p> <p><b>Gingival Index Global:</b> Intervention group(s): Baseline: 0.92 (Standard Deviation (SD): 0.28) Follow up (3 months): 0.27 9SD: 0.14) End point (12 months): 0.21 (SD: 0.16)</p> <p>Control group(s) Baseline: 0.92 (SD: 0.23) Follow up (3 months): 0.52 (SD: 0.20) End point (12 months): 0.50 (SD: 0.17)</p> <p>Baseline – 12 month mean gain score difference: 0.27 (CI: 0.16-0.39) p&lt;0.001. Other mean gain score differences also provided</p> <p>Independent groups t-test at the: 3 month follow-up: <math>t=8.20</math>, p&lt;0.001 12 month follow-up: <math>t=9.61</math> p&lt;0.001</p>	<p><b>Limitations identified by author:</b> None identified. The author did not that the power analyses revealed that about 150 participants were required for the study although the desired number was not met. The original power analysis was based on an intervention judged as being less effective than the present one.</p> <p><b>Limitations identified by review team:</b> The reporting periods were 3 month and 12 month. However 3 month was straight after the treatment and 12 months was from baseline not end of treatment. Also there was a maintenance period for the treatment group which lasted</p>

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<p>programme on periodontal health. Journal of Clinical Periodontology, 2010. 37(10): p. 912-919. <b>(Paper Two)</b></p> <p>Jönsson, B., et al., Cost-effectiveness of an individually tailored oral health educational programme based on cognitive behavioural strategies in non-surgical periodontal treatment. Journal Of Clinical Periodontology, 2012. 39(7): p. 659-665. <b>(Paper Three)</b></p> <p><b>Country of study:</b> Sweden (western country)</p> <p><b>Aim of Study:</b> Paper One: To evaluate the effectiveness of an individually tailored oral health educational</p>	<p>age = 50.1 (SD=10.3)</p> <p><b>Sex:</b> Intervention group: Female = 32 (56.1%); Male = 25 (43.9%)</p> <p>Control group: Female = 28 (50%); Male = 28 (50%)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> Intervention group: Swedish = 46 (80.7%); Other = 11 (19.3%)</p> <p>Control group: Swedish = 50 (89.3%); Other = 6 (10.7%)</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> Intervention group: Elementary school = 14 (24.6%); High school = 21 (36.8%); University = 22 (38.6%)</p> <p>Control group: Elementary school = 13 (23.2%); High</p>	<p>hygiene behaviour iii) practice of manual dexterity for oral hygiene aids iv) individual goals for oral hygiene behaviour v) continuous self-monitoring vi) generalisation of behaviour vii) maintenance of oral hygiene behaviour and prevention of relapse. The central theme of the programme was tailoring the treatment to each individual's problem, capacity and goals, with subsequent guidance towards appropriate and effective oral hygiene habits. Special emphasis was placed on strategies that would fit as naturally as possible into everyday life (Paper One, 1028 para.5).</p> <p><b>Theoretical basis:</b> The individually tailored oral health educational programme was based on the perspective of behavioural medicine i.e. an integration of cognitive behavioural principles (Bandura 1977, 1997, Baranowski et al 2002) and non-surgical periodontal treatment.</p> <p><b>By whom:</b> 2 experienced dental hygienists provided both interventions, including</p>	<p>was tested through five tests of the plaque and gingival scores. 4 of the five measurements showed almost perfect agreements (Cohen's K 0.84-0.86) and one test revealed a moderate agreement (Cohen's K 0.51).</p> <p><b>Unit of measurement:</b> Index Score. The highest score was 2.</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Gingival Index Proximal</p> <p><b>Outcome definition:</b> The presence of gingival inflammation was recorded according to the criteria for the gingival index (GI) of Loe &amp; Silness (1963). Both plaque index and gingival index were recorded on the buccal, lingual, mesial and distal tooth surfaces of the teeth.</p> <p><b>Outcome measure:</b></p>	<p><b>Gingival Index Proximal:</b> Intervention group(s): Baseline: 1.14 (SD: 0.27) Follow up (3 months): 0.37 (SD: 0.17) End point (12 months): 0.72 (SD: 0.21)</p> <p>Control group(s) Baseline: 1.13 (SD: 0.23) Follow up (3 months): 0.28 (SD: 0.20) End point (12 months): 0.69 (SD: 0.20)</p> <p>Baseline – 12 month mean gain score difference: 0.40 (CI: 0.27-0.53) <math>p&lt;0.001</math></p> <p>Other mean gain score differences also provided</p> <p>Independent groups t-test at the:</p> <p>3 month follow-up: <math>t=9.50</math>, <math>p&lt;0.001</math></p> <p>12 month follow-up: <math>t=10.7</math> <math>p&lt;0.001</math></p> <p><b>Paper One: Global Plaque Index:</b> Intervention group(s): Baseline: 0.74 (SD: 0.34) Follow up (3 months): 0.17 (SD: 0.11)</p> <p>End point (12 months):</p>	<p>until the 12 month follow-up.</p> <p>The setting in a dental clinic in Sweden is described but there is no information on population demographics.</p> <p>Study in a western country. Only 28 of 141 eligible patients (just under 20%) were excluded. There is no information on whether there were any differences between those included or excluded but the excluded sample is small.</p> <p>Only 5% dropped out overall. While all but one of the drop-outs was from the intervention group this was still only 9% of the participants within that group.</p> <p>While the t-test results in Paper One</p>

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<p>programme for oral hygiene self-care in patients with chronic periodontitis compared with the standard treatment.</p> <p>Paper Two: To evaluate an individually tailored oral health educational programme (ITOHEP) on periodontal health compared with a standard oral health educational programme. A further aim was to evaluate whether both interventions had a clinically significant effect on non-surgical periodontal treatment at 12 – month follow-up.</p> <p>Paper Three: The aim of this cost effectiveness analysis (CEA), performed from a societal perspective,</p>	<p><b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): See inclusion criteria.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> No information on population demographics so this isn't clear.</p> <p><b>Inclusion Criteria:</b> Participants clinically diagnosed with chronic periodontitis and scheduled to undergo a dental hygiene treatment (i.e. non-surgical periodontal</p>	<p>non-surgical debridement for both the experimental and the control group.</p> <p><b>To whom:</b> 57 participants</p> <p><b>How delivered:</b> To create a “dynamic dialogue” specific skills in communication were required and therefore methods of Motivational Interviewing were included.</p> <p><b>When/where:</b> Specialist clinic in periodontics</p> <p><b>How often:</b> In the experimental group the median number of sessions for the intervention and scaling treatment was 5 (quartile deviation 4-5) up to the 3 month follow-up and 9 *quartile deviation 8-9) when maintenance care was included up to the 12 month follow-up</p> <p><b>How long for:</b> Up to 3 months with maintenance care lasting until the 12 month follow-up.</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Standard treatment - The control conditions were chosen to be equivalent to the best possible routine oral health</p>	<p>gingival index (GI) of Loe &amp; Silness (1963)</p> <p><b>Outcome measure validated:</b> As both the Gingival and Plaque Indexes are well established in the clinical practice of the examiner there was no calibration before the study. However intra-observability reliability was tested through five tests of the plaque and gingival scores. 4 of the five measurements showed almost perfect agreements (Cohen's K 0.84-0.86) and one test revealed a moderate agreement (Cohen's K 0.51).</p> <p><b>Unit of measurement:</b> Index Score. The highest score was 2.</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Global Plaque Index (Paper One) Plaque Index Scores (full</p>	<p>0.14 (SD: 0.13)</p> <p>Control group(s)</p> <p>Baseline: 0.73 (SD: 0.31)</p> <p>Follow up (3 months): 0.32 (SD: 0.22)</p> <p>End point (12 months): 0.31 (SD: 0.16)</p> <p>Baseline – 12 month mean gain score difference: 0.16 (CI: 0.03-0.30) <math>p&lt;0.001</math>.</p> <p>Other mean gain score differences also provided</p> <p>Independent groups t-test at the:</p> <p>3 month follow-up: <math>t=4.36</math>, <math>p&lt;0.001</math></p> <p>12 month follow-up: <math>t=6.07</math> <math>p&lt;0.001</math></p> <p><b>Paper Two: Plaque Scores (full mouth):</b></p> <p>Intervention group(s):</p> <p>Baseline: 59 (SD: 18)</p> <p>Follow up (3 months): 17 (SD: 10)</p> <p>End point (12 months): 14 (SD: 12)</p> <p>Control group(s)</p> <p>Baseline: 57 (SD: 17)</p> <p>Follow up (3 months): 28</p>	<p>are provided in full, results of statistical tests in Paper Two aren't and only p values are provided.</p> <p><b>Evidence gaps:</b> The need for any additional research is not stated.</p> <p><b>Source of funding:</b> All papers were supported by the Swedish Research Council, Uppsala County Council, the authors' institutions and the Swedish Patient Revenue Fund for Research in Preventive Odontology. Paper One was also funded by the Pfizer Oral Care Award.</p>

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<p>was to compare costs and consequences of an individually tailored oral health educational programme (ITOHEP) based on cognitive behavioural strategies integrated in non-surgical periodontal treatment compared with a standard treatment programme.</p> <p><b>Study Design:</b> Parallel RCT</p> <p><b>Quality Score (++, +, or -):</b> ++ (NOTE: 2 questions were NR)</p> <p><b>External Validity(++, +, or -):</b> ++</p>	<p>debridement and intervention influencing oral hygiene) aged between 20 and 65, literate in Swedish and had a plaque index (PLI) according to Silness and Loe (1964) of <math>\geq 0.3</math>.</p> <p><b>Exclusion Criteria:</b> Patients were excluded if they knew that they could not be available during any part of the study period, suffered from a serious disease that precluded regular sessions, and if explorative periodontal surgery was necessary before the dental hygiene treatment. 141 patients were eligible of whom, 4 refused to participate and 28 were excluded.</p> <p><b>% of selected individuals agreed</b></p>	<p>preventive programme for patients with periodontal problems. The programme used corresponded to the description by Nyman et al (1984) and by Rylander &amp; Lindhe (1997).</p> <p><b>By whom:</b> Dental Hygienist</p> <p><b>To whom:</b> 56 participants</p> <p><b>How delivered:</b> Demonstrations, discussions, structured information, practice and prescriptions.</p> <p><b>When/where:</b> Specialist clinic in periodontics</p> <p><b>How often:</b> NR</p> <p><b>How long for:</b> NR</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N =</b> 113</p> <p><b>Intervention group N =</b> 57</p> <p><b>Control Group N =</b> 56</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): There was no statistically significant difference in the demographic variables or background characteristics between the groups.</p> <p><b>Study sufficiently powered</b> (power calculations and</p>	<p>mouth) (Paper Two).</p> <p><b>Outcome definition:</b> Both papers - The presence of plaque was recorded according to Silness &amp; Loe (1964) Plaque Index.</p> <p><b>Outcome measure:</b> Paper One only- Both plaque index and gingival index were recorded on the buccal, lingual, mesial and distal tooth surfaces of the teeth.</p> <p>Paper Two only – In the analyses all plaque scores of 1 and above were considered to be a positive indicator of plaque and the surface was registered as positive.</p> <p><b>Outcome measure validated:</b> As both the Gingival and Plaque Indexes are well established in the clinical practice of the examiner there was no calibration before the study. However intra-observability reliability was tested through five tests of the plaque and gingival scores. 4 of the</p>	<p>(SD: 17)</p> <p>End point (12 months): 28 (SD: 13)</p> <p>Differences between intervention and control at 3 months significant at <math>P&lt;0.001</math></p> <p>Differences between intervention and control at 12 months significant at <math>P&lt;0.001</math></p> <p>Mean % Plaque Index at all sites:</p> <ul style="list-style-type: none"> <li>Successful NSPT – 13 (Standard Deviation (SD): 7)</li> <li>Incomplete NSPT – 28 (SD: 15)</li> <li><math>P &lt;0.001</math></li> </ul> <p><b>Proximal Plaque Index:</b></p> <p>Intervention group(s):</p> <p>Baseline: 1.01 (SD: 0.37)</p> <p>Follow up (3 months): 0.29 (SD: 0.18)</p> <p>End point (12 months): 0.23 (SD: 0.19)</p> <p>Control group(s)</p> <p>Baseline: 0.99 (SD: 0.35)</p> <p>Follow up (3 months): 0.48 (SD: 0.28)</p>	

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	<p><b>to participate:</b> 80% agreed to participate and were eligible. The remaining 20% included 17% who were excluded and 3% who refused to participate.</p> <p><b>Potential sources of bias:</b></p>	<p>provide details): A power calculation with data from a previous study (Johnson et al 2006) based on the detection of a difference in the mean Gingival Index of interproximally of 20% between treatment groups indicated that 75 participants were required in each group (<math>\alpha=0.05</math>, <math>\beta=0.2</math>). This requirement was not met as there were only 57 in the experimental group and 56 in the control group.</p>	<p>five measurements showed an almost perfect agreement (Cohen's K 0.84-0.86) and one test revealed a moderate agreement (Cohen's K 0.51).</p> <p><b>Unit of measurement:</b> Index Score</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Proximal Plaque Index</p> <p><b>Outcome definition:</b> The presence of gingival inflammation was recorded according to the criteria for the gingival index (GI) of Loe &amp; Silness (1963). Both plaque index and gingival index were recorded on the buccal, lingual, mesial and distal tooth surfaces of the teeth.</p> <p><b>Outcome measure:</b> gingival index (GI) of Loe &amp; Silness (1963)</p> <p><b>Outcome measure validated:</b> As both the</p>	<p>End point (12 months): 0.49 (SD: 0.22)</p> <p>Baseline – 12 month mean gain score difference: 0.26 (CI: 0.10-0.43) <math>p&lt;0.001</math></p> <p>Other mean gain score differences also provided</p> <p>Independent groups t-test at the:</p> <p>3 month follow-up: <math>t=4.26</math>, <math>p&lt;0.001</math></p> <p>12 month follow-up: <math>t=6.87</math> <math>p&lt;0.001</math></p> <p><b>Plaque Scores (Interproximal sites):</b></p> <p>Intervention group(s):</p> <p>Baseline: 83 (SD: 18)</p> <p>Follow up (3 months): 28 (SD: 16)</p> <p>End point (12 months): 22 (SD: 17)</p> <p>Control group(s)</p> <p>Baseline: 79 (SD: 18)</p> <p>Follow up (3 months): 42 (SD: 22)</p> <p>End point (12 months): 45 (SD: 18)</p> <p>Differences between intervention and control at 3 months significant at</p>	

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			<p>Gingival and Plaque Indexes are well established in the clinical practice of the examiner there was no calibration before the study. However intra-observability reliability was tested through five tests of the plaque and gingival scores. 4 of the five measurements showed an almost perfect agreement (Cohen's K 0.84-0.86) and one test revealed a moderate agreement (Cohen's K 0.51).</p> <p><b>Unit of measurement:</b> Index Score</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Plaque Scores (Interproximal scores)</p> <p><b>Outcome definition:</b> Both papers - The presence of plaque was recorded according to Silness &amp; Loe (1964) Plaque Index. In the</p>	<p>P&lt;0.001</p> <p>Differences between intervention and control at 12 months significant at P&lt;0.001</p> <p><b>Mean Bleeding on Probing – (full mouth):</b> Intervention group(s): Baseline: 70 (SD: 20) Follow up (3 months): 24 (SD: 12) End point (12 months): 19 (SD: 13)</p> <p>Control group(s) Baseline: 75 (SD: 18) Follow up (3 months): 33 (SD: 15) End point (12 months): 29 (SD: 14)</p> <p>Differences between intervention and control at 3 months significant at P&lt;0.001</p> <p>Differences between intervention and control at 12 months significant at P&lt;0.001</p> <p>Mean % Bleeding on Probing at all sites:</p>	

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			<p>analyses all plaque scores of 1 and above were considered to be a positive indicator of plaque and the surface was registered as positive.</p> <p><b>Outcome measure:</b> Silness &amp; Loe (1964) Plaque Index</p> <p><b>Outcome measure validated:</b> As both the Gingival and Plaque Indexes are well established in the clinical practice of the examiner there was no calibration before the study. However intra-observability reliability was tested through five tests of the plaque and gingival scores. 4 of the five measurements showed an almost perfect agreement (Cohen's K 0.84-0.86) and one test revealed a moderate agreement (Cohen's K 0.51).</p> <p><b>Unit of measurement:</b> Index Score.</p> <p><b>Time points measured:</b> Baseline, 3</p>	<ul style="list-style-type: none"> <li>Successful NSPT – 14 (Standard Deviation (SD): 5)</li> <li>Incomplete NSPT – 33 (SD: 14)</li> <li>P &lt;0.001</li> </ul> <p><b>Mean Bleeding on Probing – (interproximal sites):</b></p> <p>Intervention group(s): Baseline: 87 (SD: 17) Follow up (3 months): 35 (SD: 18) End point (12 months): 27 (SD: 17)</p> <p>Control group(s) Baseline: 90 (SD: 13) Follow up (3 months): 46 (SD: 20) End point (12 months): 41 (SD: 19)</p> <p>Differences between intervention and control at 3 months significant at P&lt;0.01</p> <p>Differences between intervention and control at 12 months significant at P&lt;0.001</p> <p><b>Probing Pocket Depth</b></p>	

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			<p>month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Mean Bleeding on Probing – Full mouth (BoP)</p> <p><b>Outcome definition:</b> BoP was measured as the presence/absence of bleeding within 15 s after pocket probing.</p> <p><b>Outcome measure:</b> Presence or absence of bleeding</p> <p><b>Outcome measure validated:</b> No</p> <p><b>Unit of measurement:</b> Presence or absence of bleeding</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Mean Bleeding on Probing – Interproximal sites</p> <p><b>Outcome definition:</b> BoP was measured as the presence/absence of bleeding within 15 s after pocket probing.</p> <p><b>Outcome measure:</b> Presence or absence of</p>	<p><b>(PPD):</b> 4-5 mm – all sites: Intervention group(s): Baseline: 31.0% (SD: 14.3) Follow up (3 months): 12.7% (SD: 8.1) End point (12 months): 10.4% (SD: 17)</p> <p>4-5 mm – all sites: Control group(s) Baseline: 33.0% (14.0) Follow up (3 months): 14.6% (SD: 11.4) End point (12 months): 12.2% (SD: 19)</p> <p>≥6 mm – all sites: Intervention group(s): Baseline: 9.2% (SD: 9.3) Follow up (3 months): 1.6% (SD: 2.8) End point (12 months): 1/6% (2.9)</p> <p>≥6 mm – all sites: Control group(s) Baseline: 9.3% (11.0) Follow up (3 months): 1.7% (SD: 3.5) End point (12 months): 1.5% (SD: 3.2)</p> <p>&gt;4 mm – interproximal: Intervention group(s):</p>	

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			<p>bleeding</p> <p><b>Outcome measure validated:</b> No</p> <p><b>Unit of measurement:</b> Presence or absence of bleeding – findings reported as mean percentages</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Probing Pocket Depth</p> <p><b>Outcome definition:</b> PPD was measured using a manual periodontal probe (CC Williams Probe 1-2-3-5-7-8-9-10, Hu-Fridy®, Chicago, IL, USA) on 6 surfaces of each tooth.</p> <p><b>Outcome measure:</b> Findings reported as mean percentages at 4-5 mm, ≥6 mm and for interproximal &gt; 4mm</p> <p><b>Outcome measure validated:</b> No</p> <p><b>Unit of measurement:</b> mm</p>	<p>Baseline: 24.8% (SD: 17.2)</p> <p>Follow up (3 months): 7.9% (SD: 6.9)</p> <p>End point (12 months): 6.7% (SD: 6.9)</p> <p>&gt;4 mm – interproximal: Control group(s)</p> <p>Baseline: 27.7% (SD: 20.7)</p> <p>Follow up (3 months): 8.5% (SD: 10.0)</p> <p>End point (12 months): 6.7% (SD: 8.4)</p> <p>No statistical differences found between the groups at either of the 3 stages</p> <p><b>Proportion (%) of pockets closed (PPD ≤ 4mm):</b></p> <p>All sites:</p> <p>Intervention group(s): Follow up (3 months): 69% (SD: 21)</p> <p>End point (12 months): 75% (SD: 20)</p> <p>All sites:</p> <p>Control group(s): Follow up (3 months): 66% (SD: 32)</p> <p>End point (12 months): 76% (SD: 17)</p>	

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			<p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Proportion of Pockets Closed (PPD)</p> <p><b>Outcome definition:</b> PPD was measured using a manual periodontal probe (CC Williams Probe 1-2-3-5-7-8-9-10, Hu-Fridy®, Chicago, IL, USA) on 6 surfaces of each tooth.</p> <p><b>Outcome measure:</b> Findings reported as mean percentages at <math>\leq 4</math> mm</p> <p><b>Outcome measure validated:</b> No</p> <p><b>Unit of measurement:</b> mm</p> <p><b>Time points measured:</b> Baseline, 3 month follow-up and 12 month follow-up</p> <p><b>Outcome name:</b> Successful NSPT (Non-Surgical Peridental Treatment)</p> <p><b>Outcome definition:</b></p>	<p>Interproximal: Intervention group(s): Follow up (3 months): 68% (SD: 22) End point (12 months): 75% (SD: 21)</p> <p>Interproximal: Control group(s) Follow up (3 months): 67% (SD: 31) End point (12 months): 77% (SD: 17)</p> <p>No statistically significant differences at either timepoint.</p> <p>Closed Pocket % at all sites:</p> <ul style="list-style-type: none"> <li>Successful NSPT – 14 (Standard Deviation (SD): 5)</li> <li>Incomplete NSPT – 33 (SD: 14)</li> <li><math>P &lt;0.001</math></li> </ul> <p><b>Successful NSPT (Non-Surgical Peridental Treatment):</b></p> <p>Logistic regression results:</p>	

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			<p>To conclude whether the interventions had a clinically significant effect i.e. reaching a level of treatment success at the 12-month re-examination, criteria for the outcomes PLI, BoP, and pocket closure were formulated in advance. To reach a success level for non-surgical periodontal treatment (successful-NSPT), a classification based on 3 classes for the 3 outcomes were established (below). To be classified as “successful-NSPT”, at least 2 of the 3 outcomes had to be in Class I, but none in Class III. It was assumed all participants would improve after treatment and therefore the individuals not fulfilling the criteria for “successful-NSPT” were classified into the group, “incomplete-NSPT”. All the participants were</p>	<p>Plaque index (0-100%): Odds Ratio (POR)=0.95 (95% CI= 0.92-0.97, p=0.001  Bleeding on probing (0-100%): OR=1.05 (CI=0.03-31.7, p=0.979)  Percentage of PPD&gt;5mm (0-100%): OR=0.98 (CI=0.93-1.04, p=0.624)  ITOHEP intervention v ST intervention: <math>\Delta R=4.22</math> (CI=1.77-10.1, p=0.001)</p> <p><b>Behavioural results:</b></p> <p><b>Attrition details:</b>  Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p><b>Conclusion:</b>  An individually tailored oral health educational programme was more effective for achieving proper long-term oral hygiene self-care behaviour and resulted in a larger reduction in gingival inflammation than standard treatment. The differences between</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>grouped as either “successful-NSPT” or “incomplete-NSPT”.</p> <p><b>Outcome measure:</b> Class 1: % closed pocket= &gt;75%; % bleeding on probing= ≤15%; % plaque index= ≤20% Class 2: % closed pocket= ≥65%; % bleeding on probing= ≤25%; % plaque index= ≤29% Class 3: % closed pocket= &lt;65%; % bleeding on probing= &gt;25%; % plaque index= &gt;29%</p> <p><b>Outcome measure validated:</b> No</p> <p><b>Unit of measurement:</b> Dichotomous variable (“successful” or “incomplete NSPT”) based on percentage scores explained above. Used in a logistic regression model.</p> <p><b>Time points measured:</b> 12 month re-examination</p>	<p>groups remained throughout the 1 year study period. Hence, the hypothesis for the study was confirmed.</p> <p>The present study aimed to evaluate 2 different oral hygiene behavioural change programmes in non-surgical periodontal treatment regarding periodontal health. After treatment, the individually ITOHEP group had lower BoP scores than the standard health educational programme group with the largest differences being for the interproximal surfaces. For the clinical outcome variable PPD reduction, both groups improved equally. When all clinical variables were considered, more individuals in the individually tailored oral health educational group attained “successful-NSPT” level (due to lower plaque and BoP scores), and more individuals attaining this “successful-NSPT” level reported good or very good oral health</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p> <p>An intention-to-treat analysis was applied where the attrition rates were imputed with a linear interpolation imputation method for gingival and plaque index data and with the method of last value carried forward for oral health behaviour.</p> <p>For “successful NSPT” (Paper Two) a binary logistic regression model was used. Selected variables were Oral health educational treatment groups, PLI, and BoP at baseline examination, although for closed pocket, the percentage PPD45mm was used.</p> <p>Gingival Index Global, Gingival Index Proximal, Global</p>	after treatment than the “incomplete-NSPT” group.	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>Plaque Index, Proximal Plaque index and interp-proximal plaque scores were all analysed with separate 2 (experimental group/ control group) x 3 (baseline/ 3 month post-treatment/ 1-year follow-up) repeated measures ANOVA. The mean gain-score differences were analysed by the Independent group's t-test. This was also used for the Paper Two outputs: interproximal plaque scores and full mouth plaque scores</p> <p>Treatment effects on Bleeding on Probing (Paper Two) were estimated with separate 2 (experimental group/control group) x 3 (baseline/3 month post-treatment /1 year follow-up) repeated measures analyses of variance (ANOVA repeated measure) and subsequent Bonferroni's post hoc tests.</p>		

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Jonsson, B, Oscarson, N, Ohrn, K</p> <p><b>Year:</b> 2006</p> <p><b>Citation:</b> Jonsson, B., et al., Improved compliance and self-care in patients with periodontitis--a randomised control trial. International Journal of Dental Hygiene, 2006. 4(2) p. 77-83.</p> <p><b>Country of study:</b> Sweden</p> <p><b>Aim of Study:</b> To test an intervention emanating from the CSCCM, to encourage participants to increase their responsibility for their oral self-care.</p> <p><b>Study Design:</b> The study was a</p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed)</p> <p><b>Setting:</b> The Department of Periodontology, the County Council of Uppsala, Sweden</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Intervention group: <math>54.8 \pm 11.7</math> (25–74) Control group: <math>58.1 \pm 9.9</math> (41–78)</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): Lottery</p> <p><b>Report how confounding factors were minimised:</b> There were no significant baseline imbalances. There is no information on whether allocation was concealed or whether contamination was taken into account. Single blinding was used.</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> An initial questionnaire for baseline measures of oral care, these were also administered at the end. A clinical assessment at the beginning and the end administered by the same examiner. CSCCM was used to enhance patient compliance regarding their self-care behaviours.</p> <p>Visit 1: Initiation Phase, patient</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Oral Self-care habits</p> <p><b>Outcome definition:</b> No. of times brushed teeth per day and reported interdental cleaning per week</p> <p><b>Outcome measure:</b> reported interdental cleaning per week</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Number of times brushed teeth per day</p> <p><b>Time points measured:</b> Start and end</p> <p><b>Outcome name:</b> Plaque index</p> <p><b>Outcome definition:</b> Plaque index and (PLI) and percentage</p>	<p>For each outcome report</p> <p><b>Means, SDs, p-values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b></p> <p>Plaque index</p> <p>Intervention group(s) Baseline 0.59 (SD: <math>\pm 0.17</math>) (CI 0.51-0.67) End point: 0.25 (SD: <math>\pm 0.11</math>) (CI 0.20-0.30)</p> <p>Control group(s) Baseline: 0.59 (SD: <math>\pm 0.29</math>) (CI 0.44-0.75) End point: 0.33 (SD: <math>\pm 0.11</math>) (CI 0.27-0.39)</p> <p>There was a statistically significant difference in PLI between the IV group</p>	<p><b>Limitations identified by author:</b></p> <p>The patients in both groups may be considered as individuals with difficulties to comply with recommendations. Before the start of the study, they had all received periodontal treatment 1 or 2 years earlier and in spite of that treatment they still had insufficient compliance and progress of their periodontal disease.</p> <p>Individuals in the IV group obtained one extra visit to confirm the commitment.</p> <p>The study population was quite small, but still significant results could be demonstrated regarding interdental cleaning and plaque reduction, however, the</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>randomised single-blind control trial to test an intervention based on CSCCM (Client Self-care Commitment Model)</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p><b>Socioeconomic position:</b> NR <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): NR</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> Individuals 20–80 years of age with insufficient compliance, which was defined as individuals who reported interdental cleaning (tooth picks or interdental brushes) less than five times a week combined with a dental plaque score &gt;0.20 according to Silness and Loë (29).</p>	<p>presented their own explanatory model of self-care methods and disease processes, experiences of earlier treatments, and their beliefs about the reasons for disease progress. There is then an Assessment Phase, participants then negotiate a plan with the DH and then formulate a commitment plan where the DH assisted the patient to establish self-selected goals.</p> <p>Visit 2: At the next visit (after 1–2 weeks) the client reported their compliance with the established self-care commitment. Oral hygiene status was checked.</p> <p>Visit 3: The aim with the visit was to check if the patients had found the self-selected goals realistic and if any changes were necessary.</p> <p>Visit 4: The final evaluation was performed 12–14 weeks after the first visit. The patients were given the second questionnaire. The same dentist performed the same clinical assessments as at baseline. The commitment was also analysed.</p>	<p>reduction of PLI <b>Outcome measure:</b> Plaque index <b>Outcome measure validated:</b> Unclear <b>Unit of measurement:</b> percentage reduction of PLI <b>Time points measured:</b> Start and end</p> <p><b>Outcome name:</b> Gingival index and bleeding on probing <b>Outcome definition:</b> Gingival Index (GI), bleeding on probing (BoP) <b>Outcome measure:</b> percentage reduction of GI and BoP at baseline and final examination <b>Outcome measure validated:</b> Unclear <b>Unit of measurement:</b> Gingival Index (GI), bleeding on probing (BoP) <b>Time points measured:</b> Start and end</p> <p><b>Outcome name:</b> Periodontal pocket</p>	<p>(0.25 ± 0.11) and the C group (0.33 ± 0.11) (<math>t = 2.21</math>; d.f. = 33; <math>P = 0.03</math>) at the final examination. The plaque reduction was significantly higher for the IV group (56%) compared with the C group (35%) (<math>t = 2.49</math>; d.f. = 33; <math>P = 0.02</math>) (Table 3). However, a statistically significant reduction of PLI was seen at the final examination compared with baseline for both groups (IV: <math>t = 8.37</math>; d.f. = 18; <math>P &lt; 0.0001</math>) (C: <math>t = 3.88</math>; d.f. = 15; <math>P = 0.002</math>).</p> <p>Gingival Index</p> <p>Intervention group(s) Baseline 0.73 (SD: ±0.14) (CI 0.66–0.79) End point: 0.38 (SD: ± 0.20) (CI 0.28–0.48)</p> <p>Control group(s) Baseline: 0.65 (SD: ±</p>	<p>sample size may be too limited to show significant reduction in GI and BoP</p> <p><b>Limitations identified by review team:</b></p> <p>The source area is given as Sweden but no more detail than this.</p> <p>Examples of items from the questionnaires are not given.</p> <p>Only the participants were blinded to the aims and objectives of the experiment. It is not clear whether exposure to the intervention or comparison was adequate and there is no information on contamination.</p> <p>Intervention group received an extra follow-up appointment.</p> <p>Drop-out rates were not recorded.</p> <p>It is unclear whether the</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p>To avoid missing the individuals who over-reported their interdental cleaning, patients who reported interdental cleaning <math>\geq 5</math> times a week but nevertheless showed a dental plaque scores <math>&gt;0.40</math>, were also included. Dental plaque scores <math>&gt;0.40</math> has been considered by Lang et al. (30) as a marker for insufficient plaque control and increasing risk for disease progression. Bleeding on probing (BoP) <math>&gt;25\%</math> and teeth with recurrent pocket depth <math>&gt;4</math> mm was considered as a progress of the periodontal disease in concordance with Lang et al. (30).</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed</b></p>	<p><b>Theoretical basis:</b> The Client Self-care Commitment Model (CSCCM)</p> <p><b>By whom:</b> The same examiner and an experienced dental hygienist.</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> Used interview strategies, appropriate dental aids were introduced, established self-selected goals and had clinical assessments. Framed the healthcare message either self-care or patients made decisions with the DH.</p> <p><b>When/where:</b> Department of Periodontology, the County Council of Uppsala, Sweden</p> <p><b>How often:</b> 4 visits. Visit 2 was 1-2 weeks after visit 1. Visit 3 was 4 weeks after baseline and written commitment. Visit 4 was 12-14 weeks after the first visit.</p> <p><b>How long for:</b> 12-14 weeks</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> An initial questionnaire for baseline measures of oral care, these were also administered at the end. A clinical assessment at the beginning and the end administered by the same</p>	<p>depth</p> <p><b>Outcome definition:</b> Number of pockets more than 4mm at baseline and final examination</p> <p><b>Outcome measure:</b> Number of pockets more than 4mm</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Number of pockets more than 4mm at baseline and final examination</p> <p><b>Time points measured:</b> Start and end</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): Chi-Square and T-Tests</p>	<p>0.23) (CI 0.53-0.77) End point: 0.39 (SD: <math>\pm 0.14</math>) (CI 0.39-0.46)</p> <p>In both groups, there was a statistically significant reduction of GI (IV: <math>t = 7.59</math>; d.f. = 18; <math>P &lt; 0.0001</math>) (C: <math>t = 4.07</math>; d.f. = 15; <math>P = 0.001</math>) and BoP (IV: <math>t = 9.30</math>; d.f. = 18; <math>P &lt; 0.0001</math>) (C: <math>t = 5.07</math>; d.f. = 15; <math>P = 0.0001</math>). No statistically significant difference between the IV and the C groups with regard to GI or BoP could be found (Table 4).</p> <p>Bleeding on probe</p> <p>Intervention group(s) Baseline 46.8 (SD: <math>\pm 13.8</math>) (CI 40.2-53.5) End point: 18.7 (SD: <math>\pm 8.3</math>) (CI 14.7-22.8)</p> <p>Control group(s) Baseline: 39.0 (SD: <math>\pm</math></p>	<p>outcome measures were reliable.</p> <p>The setting was not in the UK although Swedish dental practices don't appear to differ too much from British ones.</p> <p><b>Evidence gaps:</b> It would be of interest to evaluate the result of the CSCCM in a longitudinal study to investigate if the results remain after an extended period of time.</p> <p>it would be of interest to study the use of CSCCM in a larger study population</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p><b>to participate:</b> 2 of the patients dropped out; one became ill, and one declined treatment at the clinic for Periodontology.</p> <p><b>Potential sources of bias:</b></p> <p><b>By whom:</b> The same examiner and an experienced dental hygienist.</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> Information was given on oral hygiene.</p> <p><b>When/where:</b> Department of Periodontology, the County Council of Uppsala, Sweden</p> <p><b>How often:</b> 12-14 weeks</p> <p><b>How long for:</b> 3 visits: Visit 2 was 1-2 weeks after the first visit. Visit 3 was 12-14 weeks after the first visit.</p>	<p>examiner.</p> <p>Visit 1: The latest periodontal status were demonstrated, discussed and compared with previous status. The oral hygiene instructions were performed, controlled and adjusted if necessary</p> <p>Visit 2: At the next visit (after 1–2 weeks), the oral hygiene status was checked.</p> <p>Visit 3: The final evaluation was performed 12–14 weeks after the first visit. The patients were given the second questionnaire. The same dentist performed the same clinical assessments as at baseline</p>		<p>16.0) (CI 30.5-47.5) End point: 16.3 (SD: ± 5.7) (CI 13.3-19.3)</p> <p>In both groups, there was a statistically significant reduction of GI (IV: <math>t = 7.59</math>; d.f. = 18; <math>P &lt; 0.0001</math>) (C: <math>t = 4.07</math>; d.f. = 15; <math>P = 0.001</math>) and BoP (IV: <math>t = 9.30</math>; d.f. = 18; <math>P &lt; 0.0001</math>) (C: <math>t = 5.07</math>; d.f. = 15; <math>P = 0.0001</math>). No statistically significant difference between the IV and the C groups with regard to GI or BoP could be found (Table 4).</p> <p>Periodontal pocket depth</p> <p>Intervention group(s) Baseline 5.8 (SD: ±3.9) (CI 3.9-7.7) End point: -2.7 (SD: ± 3.0) (CI 1.2-4.1)</p> <p>Control group(s)</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 35</b>  <b>Intervention group N = 19</b>  <b>Control Group N = 16</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): No significant imbalances</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>		<p>Baseline:4.9 (SD: ± 6.7)  (CI 1.3-8.4)  End point: -2.9 (SD: ± 3.1)  (CI 1.2-4.5)</p> <p><b>Behavioural results:</b></p> <p>Oral self-care habits – increase in use of interdental cleaning</p> <p>Intervention group(s)  Baseline: 4  End point: 19</p> <p>Control group(s)  Baseline: 10  End point: 11</p> <p>A significantly higher proportion of patients in the IV group (79%) increased their use of interdental cleaning from baseline to the final examination compared with patients in the C group (6%) (<math>\chi^2 = 6.93</math>; d.f. = 1; <math>P = 0.008</math>) (Table 2). A total of 78% in the IV group reported that the written</p>	

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				<p>commitment did influence their oral self-care behaviours in a positive way. 79% found it valuable to establish self-selected goals for oral self-care.</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control): Loss of 2 participants, <b>NR</b> in which groups.</p> <p><b>Conclusion:</b> The CSCCM enhanced the client participation in the treatment process and stimulated to improved oral self-care behaviours. In addition, the model contributed to a reduction in periodontal pockets. Patients in the IV group increased their interdental cleaning</p>	

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				and reduced their PLI significantly compared with those in the C group. In addition, there was a tendency to higher reduction of BoP in the IV group although it did not reach a significant level. The majority of the individuals in the IV group reported that the written commitment had influenced on their oral self-care habits in a positive direction, which was confirmed with a significant reduction of PLI.	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> B. Jonsson, K Ohrn, N Oscarson, P Lindberg</p> <p><b>Year:</b> 2009</p> <p><b>Citation:</b> Jonsson et al An individually tailored treatment programme for improved oral hygiene: introduction of a new course of action in health education for patients with periodontitis. International journal of dental hygiene, 2009.</p> <p><b>Country of study:</b> Sweden</p> <p><b>Aim of Study:</b> The aim of the present study was to describe and evaluate an individually tailored treatment programme based on a behavioural medicine approach for oral hygiene self-care in patients with chronic periodontitis. More specifically, this study</p>	<p><b>Source Population(s):</b> Sweden</p> <p><b>Setting:</b> This study was conducted at the Department of Periodontology in a Swedish county council. The patients were referred to the clinic for periodontal treatment. (p.169 para.7)</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> 50 and 60</p> <p><b>Sex:</b> Male and Female</p> <p><b>Sexual orientation:</b> Not stated</p> <p><b>Disability:</b> Not stated</p> <p><b>Ethnicity:</b> Not stated</p> <p><b>Religion:</b> Not stated</p> <p><b>Place of residence:</b> Not stated</p> <p><b>Occupation:</b> Not stated</p> <p><b>Education:</b> Not</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): <b>N/A.</b> (no control group)</p> <p><b>Report how confounding factors were minimised:</b> [quality assessment]</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> The intervention included the following elements: a) an interview to ascertain the patient's knowledge of periodontal disease, self-care habits and attitude towards oral hygiene, as well as to discuss long-term goals; b) analysis of oral hygiene behaviour based on the above data by the dental hygienist – disclosing solution was used to illustrate the current oral biofilm and initiate a discussion related to oral hygiene aids; c) practice of manual dexterity once patient's oral hygiene aids had been chosen; d) the formulation of an action plan for oral self-care before the next session was</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> 1) Plaque indices (PI)</p> <p><b>Outcome definition:</b> Calculated for vestibular and lingual surfaces reflected the toothbrushing behaviour and interproximal cleaning behaviour (p.168 para.2).</p> <p><b>Outcome measure:</b> A modified three-grade (0-2) plaque index according to Silness and Loe was used (p.168 para.2). A Hu-Fridy Williams probe was used (p.168 para.3).</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Index score used to</p>	<p><b>1)</b> Plaque indices and <b>2)</b> Gingival indices</p> <p><b>Mrs A:</b> When the intervention was introduced at week four (a new toothbrushing technique was introduced and brushing skills were practised), a rapid decrease for both PI and GI occurred for the vestibular and lingual surfaces. During week five and six when interdental cleaning aids were introduced a rapid decrease of PI occurred from 1.1 to 0.3. As could be expected, there was a delay in the decrease in the GI but it followed the PI closely. (p.170 para.2)</p> <p>The total PI showed an average value of 0.58 (Baseline phase), 0.50 (Analysis and applied skill phase), 0.16 (Generalisation phase) and 0.18 (Follow-up/maintenance phase)</p>	<p><b>Limitations identified by author:</b> Experimental single-case studies do not replace experimental group studies and it is not possible to generalise the result to a larger group. (p.174 para.3)</p> <p><b>Limitations identified by review team:</b> As noted by the author the study is not externally valid.</p> <p><b>Evidence gaps:</b> NR</p> <p><b>Source of funding:</b> The study was supported by the dental healthcare administration in Uppsala County Council and the Sture Nyman Foundation. (p.174 para.5)</p>

<p>aims to describe the programmes' short- and long-term effect on oral hygiene behaviour, dental plaque control, gingival and periodontal health and individually long-term goals in 2 experimental single-case studies. (p.167 para.7)</p> <p><b>Study Design:</b> 2 experimental single-case studies with multiple-baselines over 2 different self-administered oral hygiene behaviours were conducted.(p.167 para.8)</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> -</p>	<p><b>stated</b>  <b>Socioeconomic position:</b> Not stated  <b>Social capital:</b> Not stated  <b>Smoking habits:</b> Non-smoker and smoker (20 cigarettes per day)</p> <p><b>Eligible population</b>  (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</p> <p><b>State if eligible population is considered by the study authors as representative of the source population: N/A.</b> – this is a study of just 2 cases</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate: N/A.</b></p>	<p>formulated; e) continuous self-monitoring via a short structured diary; and f) generalisation of behaviour by coordinating all the self-care aids that had been introduced.</p> <p><b>Theoretical basis:</b> Social Cognitive Theory is an example of a theoretical framework that is commonly used for the description and understanding of different factors influencing health behaviour. To prevent periodontal disease there is a need for lifelong adherence to effective oral hygiene habits. Consequently it is crucial to develop and test integrated cognitive/behavioural approaches prospective longitudinal studies adapted to regular periodontal treatment. This implies that strategies are based on individual factors (psychological, contextual and physiological) that are related to health outcomes of interest and derived from individual assessments. (p.167 paras 3 and 5)</p> <p><b>By whom:</b> The intervention was conducted by an experienced dental hygienist (the first author) who also performed the scaling treatment. The intervention was supervised by a psychologist. The clinical assessments were performed by the same</p>	<p>calculate mean value – maximum was 2 (p.168 para.2)</p> <p><b>Time points measured:</b> Every week for 8 weeks, then weeks 13, 21, 40, 52, 68 and 104 (p.171 Fig 1)</p> <p><b>Outcome name: 2</b>  Gingival indices</p> <p><b>Outcome definition:</b> As with plaque indices, calculated for vestibular and lingual surfaces reflected the toothbrushing behaviour and interproximal cleaning behaviour (p.168 para.2).</p> <p><b>Outcome measure:</b> A modified version of Loe and Silness three-grade (0-2) gingival index was used. A Hu-Fridy Williams probe was used (p.168 para.3).</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Index score used to calculate mean value – maximum was 2</p>	<p>respectively. The corresponding figures of the <b>gingival index</b> were 0.64 (Baseline phase), 0.55 Analysis and applied skill phase), 0.15 (Generalization phase) and 0.20 (Follow-up/ maintenance phase) respectively. (p.171 para.1)</p> <p>Mr B:  When the intervention was introduced during week 4 (a new toothbrushing technique was introduced and brushing skills was practise), a rapid decrease for both PI and GI occurred for the vestibular and lingual surfaces (Fig. 2a). At week five when toothpicks were introduced a rapid change in PI occurred from a mean of 1.5 to 0.6 (Fig. 2b). As expected, there was a delay in the decrease in the GI, but it followed the PI closely. (p.172 para.2)</p> <p>The total <b>PI</b> showed an average value of 1.18</p>
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	<b>Potential sources of bias:</b>	<p>examiner, a specialist in Periodontology, for both subjects throughout the course of the study. (p.169 para.7)</p> <p><b>To whom:</b> 2 participants</p> <p><b>How delivered:</b> An integration of cognitive behavioural principles with regular periodontal treatment was made when the treatment programme organised. In order to facilitate this strategy Motivational Interviewing (MI) techniques were used. (p.168 para.6)</p> <p><b>When/where:</b> The Department of Periodontology in a Swedish county council. (p.169 para.7)</p> <p><b>How often:</b> Baseline consisted of 3 sessions in a 3 week period. This was followed by analysis of applied skills (intervention component I-V) which also included 3 (45-75 min) sessions over a 3 week period. Generalisation (components VI-VII) occurred over 2 to 3 sessions (each 45-75 min long) with the last session undertaken 1 month after the previous session. 3, 12 and 24 month follow-up examinations were also included and 2 maintenance care sessions in between (p.170 Table 1).</p> <p><b>How long for:</b> Not absolutely clear because generalisation sessions could vary in timing</p>	<p>(p.168 para.2)</p> <p><b>Time points measured:</b> Every week for 8 weeks, then weeks 13, 21, 40, 52, 68 and 104 (p.171 Fig 1)</p> <p><b>Outcome name:</b> 3) Probing Pocket Depth</p> <p><b>Outcome definition:</b> NR</p> <p><b>Outcome measure:</b> Measured at 6 surfaces of each tooth</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> NR</p> <p><b>Time points measured:</b> Baseline, 3 month, 1 year and 2 year follow-ups</p> <p><b>Outcome name:</b> 4) Bleeding on probing</p> <p><b>Outcome definition:</b> NR</p> <p><b>Outcome measure:</b> Measured in connection with measurement of periodontal pockets (p.168 para.3)</p> <p><b>Outcome measure validated:</b> NR</p>	<p>(Baseline phase), 0.92 (Analysis and applied skill phase), 0.27 (Generalisation phase) and 0.13 (Follow-up/maintenance phase) respectively.</p> <p>The corresponding figures of the <b>gingival index</b> were 1.17 (Baseline phase), 1.21 (Analysis and applied skill phase), 0.55 (Generalisation phase) and 0.21 (Follow-up/maintenance phase) respectively.</p> <p><b>3)</b> Probing Pocket Depth (% probing <math>\geq</math> 5mm) (p.171 Table 3)</p> <p>Mrs A: Baseline:11% Follow up (3 months): 2% Follow up (12 months): 2% End point (24 months): 1%</p> <p>Mr B: Baseline: 26% Follow up (3 months): 2% Follow up (12 months): 2% End point (24 months): 4%</p>	
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		<p>and number but the intervention itself would have lasted about 2-3 months with an additional 3 weeks for the baseline. This was then followed by a 24 month maintenance period.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 2</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): <b>N/A.</b> – there are only 2 cases</p> <p><b>Study sufficiently powered</b> (power calculations and provide details):<b>N/A</b></p>	<p><b>Unit of measurement:</b> NR</p> <p><b>Time points measured:</b> NR</p> <p><b>Outcome name:</b> 5) Oral Hygiene Behaviour</p> <p><b>Outcome definition:</b> NR</p> <p><b>Outcome measure:</b> Questionnaire which covered oral self-care habits such as frequency of toothbrushing and interdental cleaning, type of toothbrush and interdental cleaning aid and when and where the oral cleaning was performed. (p.168 para.4)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> NR</p> <p><b>Time points measured:</b> A questionnaire was completed by the participants immediately after the first clinical</p>	<p><b>4) Bleeding on probing (p.171 Table 3)</b></p> <p>Mrs A: Baseline: 68% Follow up (3 months): 10% Follow up (12 months): 16% End point (24 months): 6%</p> <p>Mr B: Baseline: 83% Follow up (3 months): 16% Follow up (12 months): 15% End point (24 months): 10%</p> <p><b>Behavioural results:</b></p> <p><b>Outcome name:</b> 5) Oral Hygiene Behaviour</p> <p>At baseline Mrs A reported toothbrushing twice a day using a manual toothbrush and disclosed an insufficient toothbrushing technique. She used dental floss 6 times per week and toothpicks after meals.</p> <p>She changed technique</p>	
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			<p>examination and before the clinical examination at the 3, 12, and 24 month follow-ups. (p.168 para.4)</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): To conclude whether the intervention programme had a clinically significant effect, criteria for improvement were formulated in advance. The mean PI (for all calculated tooth surfaces) should be reduced to a mean level close to 0.20. For clinically significant periodontal improvement the mean BoP index should be below 20% of the total number of tooth surfaces. Visual inspection of the changes in mean, level, trend and latency of change</p>	<p>during the intervention and by the 1 year follow-up toothpicks were used as the main daily interdental cleaning aids and interdental brushes were used 2-3 times per week. At the 2 year follow-up she cleaned her teeth with a power toothbrush once a day and interdental cleaning was performed using toothpicks and interdental brushes on a daily basis (p.170 para.1).</p> <p>At baseline Mr B reported brushing his teeth with a manual toothbrush twice a day and he used dental floss and toothpicks very sparsely. During the intervention he improved his toothbrushing technique and he chose to clean between his teeth on a daily basis. This remained the case throughout the follow-up periods although the times when he did it changed (p.172 para.1).</p> <p><b>Attrition details:</b></p>	
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			<p>across the different phases was applied for judgement of the intervention effect. (p.169 para.9)</p>	<p><b>N/A.</b></p> <p><b>Conclusion:</b> The main result from the present study was that the individually tailored treatments based on an integrated behavioural and oral health approach could be successfully applied in the 2 study participants. Both reached the clinical significant improvement for plaque (22, 24, 25), suggesting that the intervention was effective to improve oral hygiene practise. Further, the pre-decided criteria for BoP were achieved. The positive results remained stable throughout the 2-year study period for both participants. (p.173 para.3).</p> <p>The individually tailored treatment programme seems efficacious and useful to improve long-term adherence to oral hygiene in periodontal treatment. Such programmes need to focus on the patient perspective since all actions originate from</p>	
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				<p>the patient thoughts, intermediate and long-term goals.</p> <p>Finally, periodontal health was substantially improved based on the selected clinical criteria. The programme is now being tested in a randomised controlled trial and by doing so it is also being adapted to a larger clinical practice sample. (p.174 para.4)</p>	
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<p><b>Author:</b> Kakudate, N. et al</p> <p><b>Year:</b> 2009</p> <p><b>Citation:</b> Kakudate, N., Morita, Manabu., Sugai, Makoto., and M. Kawanami. Systematic cognitive behavioural approach for oral hygiene instruction: A short-term study. Patient Education and Counseling 74 (2009) 191–196</p> <p><b>Country of study:</b> Japan</p> <p><b>Aim of Study:</b> Determine whether a six-step behavioural cognitive method is more effective than traditional oral hygiene instruction</p> <p><b>Study Design:</b> Parallel RCT</p>	<p><b>Source Population(s):</b> Patients with mild to moderate chronic periodontitis who were visiting a private dental clinic in Sapporo (Japan) for periodontal treatment</p> <p><b>Setting:</b> private dental clinic in Sapporo (Japan)</p> <p><b>Location (urban or rural):</b> Sapporo (Japan)</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 37 – 76 years. Mean age = 56.4  <b>Sex:</b> 22 Male and 16 female  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> Sapporo, Japan  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic</b></p>	<p><b>Method of allocation:</b> Randomisation was performed blindly according to a random numbers table</p> <p><b>Report how confounding factors were minimised:</b> NR</p> <p><b>Programme/Intervention description:</b>  <b>What was delivered:</b> The subjects received counselling using the six-step method (modified for periodontal patients) for 10 mins following traditional oral hygiene instruction (including toothbrushing instruction) which lasted for 20 mins</p> <p><b>Theoretical basis:</b> Cognitive behaviour approach – Farquhar's six step method (modified to be applicable to periodontal patients):  Step 1: identifying the problem  Step 2: creating confidence and commitment  Step 3: Increasing awareness of behaviour  Step 4: Developing and implementing the action plan  Step 5: Evaluating the plan  Step 6: Maintaining change and preventing relapse</p>	<p><b>Outcomes (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</b></p> <p><b>Outcome name:</b> Plaque index</p> <p><b>Outcome definition:</b> Plaque index was evaluated using the Plaque Control Record (PCR) of O'Leary et al.</p> <p><b>Outcome measure:</b> PCR</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Performed twice with a 1 week interval. At first instruction and final instruction</p> <p><b>Outcome name:</b> Daily frequency of tooth brushing (behavioural)</p>	<p><b>Oral health (clinical) results:</b>  PCR value %: Mean (SD), P-value</p> <p><b>Total sample:</b> NR  <b>Baseline:</b> NR  <b>Follow up (all time points):</b> NR  <b>End point:</b> NR</p> <p><b>Intervention group(s):</b> n=18  <b>Baseline:</b> 56.90 (15.75)  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 15.98 (8.71), p&lt;0.001 (Wilcoxon's signed rank test) and p&lt;0.01 (ANCOVA)</p> <p><b>Control group(s):</b> n=20  <b>Baseline:</b> 49.78 (13.35)  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 20.82 (7.93), p&lt;0.001 (Wilcoxon's signed rank test)</p> <p><b>Behavioural results:</b></p>	<p><b>Limitations identified by author:</b></p> <p>Traditional oral hygiene instruction was carried out by one dental hygienist in both groups, whereas six step method was performed by one dentist. It is generally imagined that a dentist is perceived as more trustworthy than a dental hygienist by patients, which might have positively influenced intervention outcomes (p.195).</p> <p>The study focussed on patients with mild to moderate chronic periodontitis. There might be a difference between self-efficacy of patients with mild to moderate chronic periodontitis and that of patients with severe chronic periodontitis.</p> <p>Longer follow-up studies are required because the</p>

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<b>Quality Score (++, +, or -):</b> + <b>External Validity</b> (++, +, or -): +	<b>position:</b> NR <b>Social capital:</b> NR  <b>Eligible population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> Patients with mild to moderate chronic periodontitis according to the criteria of Hirschfeld and Wasserman (1978) and slight or moderate periodontitis according to the previous criteria of the ADA (2006)  <b>State if eligible population is considered by the study authors as representative of the source population:</b> NR  <b>Inclusion Criteria:</b> Patients with mild to moderate chronic periodontitis according to the criteria of Hirschfeld and Wasserman (1978)	<b>By whom:</b> Counselling by a dentist. Traditional oral hygiene instruction by a dental hygienist <b>To whom:</b> Patient <b>How delivered:</b> Step 1 and 2 at first visit. Step 3 and 4 at second visit. Step 5 at third visit Tooth brushing instructions were based on the Bass method. <b>When/where:</b> Private dental clinic, Japan <b>How often:</b> Once a week for 3 weeks <b>How long for:</b> 20 mins (instruction) plus 10 mins (counselling)  <b>Control/Comparator description:</b> <b>What was delivered:</b> Traditional oral hygiene instruction for 20 mins (including toothbrushing instruction) <b>By whom:</b> Dental hygienist <b>To whom:</b> Patient <b>How delivered:</b> Tooth brushing instructions were based on the Bass method. <b>When/where:</b> Private dental clinic, Japan <b>How often:</b> Once a week for 3 weeks <b>How long for:</b> 20 mins  <b>Sample size at baseline:</b>	characteristics) <b>Outcome definition:</b> Daily frequency of tooth brushing <b>Outcome measure:</b> Number of times <b>Outcome measure validated:</b> NR  <b>Unit of measurement:</b> Number  <b>Time points measured:</b> First and final instruction (visit 1 and visit 3)  <b>Outcome name:</b> Toothbrushing duration (behavioural characteristics) <b>Outcome definition:</b> Length of time toothbrushing <b>Outcome measure:</b> Length of time <b>Outcome measure validated:</b> NR  <b>Unit of measurement:</b> Minutes  <b>Time points measured:</b> First and final instruction	Daily frequency of toothbrushing: Mean (SD), P-value  <b>Total sample:</b> NR <b>Baseline:</b> NR <b>Follow up (all time points):</b> NR <b>End point:</b> NR  <b>Intervention group(s):</b> n=18 <b>Baseline:</b> 2.11 (0.43) <b>Follow up (all time points):</b> N/A <b>End point:</b> 2.53 (0.40), p<0.01 (Wilcoxon's signed rank test)  <b>Control group(s):</b> n=20 <b>Baseline:</b> 2.13 (0.32) <b>Follow up (all time points):</b> N/A <b>End point:</b> 2.35 (0.81)  Toothbrushing duration (min): Mean (SD), P-value  <b>Total sample:</b> NR <b>Baseline:</b> NR <b>Follow up (all time points):</b> NR <b>End point:</b> NR	observation period of this study was relatively short (3 weeks).  It was not possible to determine whether the results of this study could be attributed to the character of the intervention or to the additional time (total of 30 min) spent with patients in the intervention group.  This study was performed only in one private dental clinic. It is necessary to confirm similar results in other institutions or clinics in future research. (p.195)  Self-care behaviour was only assessed by means of self-reports. This method induces possible bias such as social desirability, which might have influenced outcomes (p.195).  <b>Limitations identified</b>

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	<p>and slight or moderate periodontitis according to the previous criteria of the ADA (2006)</p> <p><b>Exclusion Criteria:</b> Potential subjects were excluded if they had physical limitations interfering with manual dexterity, or fewer than 18 teeth.</p> <p>Also excluded were patients who had undergone extensive nonsurgical periodontal treatment within the previous 6 months, periodontal surgery within the previous 2 years or any active or planned periodontal treatment other than routine dental prophylaxis.</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> Self-care behaviour was only assessed by</p>	<p><b>Total sample N = 38</b> <b>Intervention group N = 18</b> <b>Control Group N = 20</b></p> <p><b>Baseline comparisons:</b> Total group: 16 females and 22 males (there were not imbalances between the 2 groups: control (8 female, 12 male), intervention (8 female, 10 male))</p> <p><b>Study sufficiently powered (power calculations and provide details):</b> A power calculation was performed to determine the sample size required. The standard deviations of measurement parameters (daily frequency of toothbrushing) estimated from the results of a preliminary study with 10 subjects were 0.28 for the intervention group and 0.84 for the control group. A minimum of 30 subjects were required to allow a 95% chance of detecting a statistically significant difference with a set at 0.05 and the power of the study set at 80%.</p>	<p><b>Outcome name:</b> Weekly frequency of interdental cleaning (behaviour characteristics)</p> <p><b>Outcome definition:</b> Weekly frequency of interdental cleaning</p> <p><b>Outcome measure:</b> Number of times per week</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number</p> <p><b>Time points measured:</b> First and final instruction</p> <p><b>Outcome name:</b> Self-efficacy for brushing of the teeth</p> <p><b>Outcome definition:</b> Self-efficacy for brushing of the teeth</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> The answers were along a 5-point Likert scale from 1 (not</p>	<p><b>Intervention group(s):</b> n=18 <b>Baseline:</b> 3.38 (0.95) <b>Follow up (all time points):</b> N/A <b>End point:</b> 6.16 (2.20), p&lt; 0.001 (Wilcoxon's signed rank test) and p&lt;0.01 (ANCOVA)</p> <p><b>Control group(s):</b> n=20 <b>Baseline:</b> 3.68 (1.73) <b>Follow up (all time points):</b> N/A <b>End point:</b> 4.38 (1.16), p&lt;0.01 (Wilcoxon's signed rank test)</p> <p>Weekly frequency of interdental cleaning:</p> <p><b>Total sample:</b> NR <b>Baseline:</b> NR <b>Follow up (all time points):</b> NR <b>End point:</b> NR</p> <p><b>Intervention group(s):</b> n=18 <b>Baseline:</b> 1.22 (1.80) <b>Follow up (all time points):</b> N/A</p>	<p><b>by review team:</b> Method of participant recruitment and/or refusal rate not reported. Difficult to understand whether study population was representative of source.</p> <p>Whether allocation into groups was concealed or possible contamination not reported.</p> <p>Effect sizes not reported.</p> <p><b>Evidence gaps:</b> An additional intervention study is required to compare the results between when six-step method is carried out by a dentist and by a dental hygienist.</p> <p>It is necessary to confirm similar results in other institutions or clinics in future research.</p>

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	means of self-reports. This method induces possible bias such as social desirability, which might have influenced outcomes (p.195).		<p>confident) to 5 (completely confident) for each item. A score of "Self-efficacy for brushing of the teeth" for each subject was expressed as the sum of the scores assigned for 5 items, therefore having a range of 5–25</p> <p><b>Time points measured:</b> First and final instruction</p> <p><b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b> No drop outs reported. The Mann–Whitney U-test was used to analyse differences in the clinical, behavioural, and self-efficacy parameters between the 2 groups when the subjects start Step 1 (the first instruction). Wilcoxon's signed-rank test was</p>	<p><b>End point:</b> 11.56 (4.93) <math>p &lt; 0.001</math> (Wilcoxon's signed rank test) and <math>p &lt; 0.01</math> (ANCOVA)</p> <p><b>Control group(s):</b> n=20</p> <p><b>Baseline:</b> 0.85 (1.63)</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> 3.48 (3.11), <math>p &lt; 0.01</math> (Wilcoxon's signed rank test)</p> <p>Self-efficacy for brushing of the teeth:</p> <p><b>Total sample:</b> NR</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> NR</p> <p><b>End point:</b> NR</p> <p><b>Intervention group(s):</b> n=18</p> <p><b>Baseline:</b> 16.22 (3.23)</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> 22.06 (1.95), <math>p &lt; 0.001</math> (Wilcoxon's signed rank test) and <math>p &lt; 0.01</math> (ANCOVA)</p>	<p>Further studies on the six-step method are needed to evaluate the medium and long-term outcomes, periodontal status, compliance for periodontal treatment and regular check-ups (p.195)</p> <p><b>Source of funding:</b> NR</p>

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			<p>performed to examine significant change within each group between the first instruction and the final instruction when the subjects start Step 5 at the third visit.</p> <p>The analysis of covariance (ANCOVA) was used to test significant difference in the behavioural and self-efficacy parameters at the final instruction between the 2 groups using the parameters at the first instruction as a covariate. Multiple regression analysis was carried out to test an association between toothbrushing behaviour after intervention and possible explanatory variables (p.194).</p>	<p><b>Control group(s):</b> n=20</p> <p><b>Baseline:</b> 16.55 (3.14)</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> 18.90 (3.04), <math>p&lt;0.01</math> (Wilcoxon's signed rank test)</p> <p><b>Attrition details:</b> NR</p> <p><b>Conclusion:</b> The six-step method might be more effective for enhancing self-efficacy and behavioural change of oral hygiene than traditional oral hygiene instruction alone. The six-step method is suitable for clinical application because it is a systematic and simple method. The data suggested that six-step method is a useful tool for improving short-term oral hygiene behaviour of patients with mild to moderate periodontitis.</p>	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> Kasila K, Poskiparta, M, T Hettunen, T, Pietila, I</p> <p><b>Year:</b> 2006</p> <p><b>Citation:</b> Kasila, K., Poskiparta, M., Kettunen, T. and Pietila, I. (2006) Oral health counselling in changing schoolchildren's oral hygiene habits: a qualitative study, <i>Community Dent Oral Epidemiol</i>, 34, 419-428. <b>(Paper One)</b></p> <p>Kasila, K., Poskiparta, M., Kettunen, T., and Pietila, I. 2008, Variation in assessing the need for change of snacking habits in schoolchildren's oral health counselling, <i>International Journal of Paediatric</i></p>	<p><b>Study design:</b> Data was collected as part of a larger project of schoolchild-dental hygienist communication in public dental care. Audiotaped counselling sessions conducted by dental hygienists. The follow up data included 97 counselling sessions at 2 points in time. (Paper one, p.421, para.1)</p> <p>Data collected was part of a larger follow-up research project (2002 – 2005), which aimed to investigate oral health counselling of schoolchildren diagnosed with at least one active initial caries lesion by public dental care. This included 66 counselling sessions in 2002 and 31 counselling sessions in 2003. The data was audiotaped. (Paper Two, p.108, para.5)</p> <p><b>Research aims, objectives, and questions:</b> The aim of this study was to investigate schoolchild-dental hygienist counselling conversations regarding changes of oral</p>	<p><b>Population the sample was recruited from:</b> Public dental care setting of a single town in Finland. (Paper One, p.421), (Paper Two, p108, para.5).</p> <p><b>How sample was recruited:</b> They were part of a larger research project of schoolchild-dental hygienist communication in public dental care. (Paper One, p.421) (Paper Two, p.108, para.5)</p> <p><b>How many participants recruited:</b> 31 school children (Paper One, p.421), (Paper Two, p.109, para.5).</p> <p><b>Sample characteristics:</b>  <b>Age:</b> Between 11 and 13 years old.  <b>Sex:</b> 15 female; 16 male  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> Finland  <b>Occupation:</b> NR</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>The audiotapes from the counselling sessions were analysed qualitatively using content analysis. (Paper One, p.422, para.2)</p> <p>The children's individual descriptions of their oral hygiene habits and dental hygienists counselling practices were coded under these 4 study aims: introduction to counselling, discussion about assessing the schoolchildren's need for change in oral habits, discussion about readiness for change and counselling strategies which considered changes and new oral hygiene habits. (Paper One, p.422, para.2)</p> <p>The counselling conversations about dietary issues within the counselling sessions were identified and recorded in separate files. The analysis then continued by identifying and labelling the participants' communication activities. The particular phrases, incidents, turns or types of behaviour were identified and coded, with due regard to the schoolchildren's</p>	<p><b>Limitations identified by author:</b>  <b>Paper One</b>  One-sided delivery of information was occasionally used within this study. Individually tailored information is a necessary part of counselling. (pp.424, para.3)</p> <p>In many cases the assessment of the children's readiness for change remained unclear although nearly every child had a need for change in oral hygiene habits.(p.425, para.1)</p> <p>Advice was given by using recommendations and persuasive styles, both of which have not shown strong tendencies to produce lifestyle change.(pp.426, para.2)</p> <p>Could avoid deep conversation because the dental hygienist adopted a dominating role of professional. Or they were unaccustomed to</p>

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<p>Dentistry, 18, 107-116. <b>(Paper Two)</b></p> <p><b>Country of study:</b> Finland</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p>hygiene habits within the theoretical framework of the transtheoretical model and the motivational interview. (Paper One, p.421, para.2)</p> <p>The aim of this study was to explore the counselling communication activities that were used for assessing schoolchildren's need for change of snacking habits. In addition, the schoolchildren's assessment of their need for change was examined one year later, in 2003. (Paper Two, p.108, para.5)</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> The transtheoretical model (Figure 1) and motivational interviews. (Paper One, p.420, para.1) (Paper Two, p.108, para.2).</p> <p><b>State how data were collected:</b> <b>What method(s):</b></p> <p><b>Paper One</b> Thirty one 11-13 year old schoolchildren diagnosed with at least one initial caries lesion consented to participate in an audiotaped counselling sessions conducted by 4</p>	<p><b>Education:</b> NR <b>Socioeconomic position:</b> NR <b>Social capital:</b> NR (Paper One, p.421-422), (Paper Two, p.109, para.5).</p> <p><b>Inclusion criteria:</b> The school child must have at least one initial caries lesion. (Paper One, p.421), (Paper Two, p.108, para.5).</p> <p><b>Exclusion criteria:</b> NR</p>	<p>individual descriptions of their snacking habits and the dental hygienists' communication activities. (Paper Two, p.110).</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>Paper One</b></p> <ul style="list-style-type: none"> <li>Nearly every school child needed a change in tooth brushing practices.</li> <li>Their needs for change varied in different areas (Paper One, p.423).</li> <li>Comparing the children's self-report with the recommendation assessed their need for improving tooth brushing frequency. The children were aware of the recommendation but needed to revise the technique used. This was shown by plaque on their teeth. 9 children were advised and guided on brushing technique. (Paper, One, p.423, pa2).</li> <li>Over two-thirds of the schoolchildren needed to change their dental flossing habits due to at least one caries lesion and not flossing regularly. (Paper One, p.423, para.3).</li> </ul>	<p>participating in conversation and felt the issues were difficult or boring. (pp.426, para.3)</p> <p>Public dental care setting within one town in Finland. (p.421)</p> <p>Took minimal responses such as "mmm" to mean a positive acknowledgment but not necessarily the case with all participants. (p.422, para.4)</p> <p>Schoolchildren stated that their tooth brushing was correct although it did not conform to the recommendations (p.424, para.2).</p> <p><b>Paper Two</b> The data were restricted and therefore cannot be generalised easily.</p> <p>The counsellors' previous knowledge on counselling had an effect on driving them towards a more structure format.</p> <p><b>Limitations identified by review team:</b> The dental hygienists and</p>	

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	<p>dental hygienists. The child's caries lesion was showed to them using a dental mirror.</p> <p>The follow up data consists of 97 counselling sessions which formed 2 sequential parts:</p> <p>In spring 2002 the data comprised 66 counselling sessions varying between 1 to 4 per child. These were completed within one month. Then in 2003 the data comprised of 31 counselling sessions in which the school children assessed their need for change in oral hygiene habits (frequency of toothbrushing and flossing). This happened during a single session.</p> <p>During the counselling sessions the hygienist provided information on the aetiology of oral diseases, oral health care and recommendations. The hygienist did not encourage the children to reveal their own needs, aims, readiness and expectations of oral health self-care, changes and counselling. They stated the purpose of counselling and emphasised the importance of</p>		<ul style="list-style-type: none"> <li>11 schoolchildren were found to be in preparation to change their brushing frequency<sup>7</sup> school children appeared to be in preparation for changes in dental flossing. (Paper One, p.423, para.5 and para.7).</li> <li>In 2003 4 children had made changes, this was related to the discussion about the change process and goal setting. 3 children had made a change in their dental flossing habits. 3 children had made changes in both areas. (Paper One, p.423, para.7).</li> </ul> <p><b>Paper Two</b></p> <p>The schoolchildren's snacking habits were recalled during the counselling sessions. In 12 of the sessions recall was very concise and often remained quite separate from the counselling, however in 17 the recall was considerable extended enabling assessment of snacking behaviour. As a whole their descriptions of snacking habits were usually minimal and ambiguous. (Paper Two, p.110)</p> <p>The school children's defensive attitude was manifested when they replied to the counsellor's assessment by offering excuses for their detrimental behaviour, such as being usual for his or her age.</p>	<p>counsellors were not blind to the research aims and outcomes.</p> <p>The research aim, particularly in Paper One is quite broad and a series of more precise objectives would have enhanced the clarity of this study.</p> <p>The sampling strategy is not set out in Paper One. In Paper Two it says - "During regular scheduled appointments the dental hygienists systematically recruited voluntary schoolchildren who met the inclusion criterion to participate in the study" (Paper Two p.109 para.4)- however it is not clear what it means by "systematic"</p> <p>Paper Two is clear that the dental hygienists were the hygienists the schoolchildren visited in scheduled appointments. However there is no information on how the research was explained to participants.</p> <p>Lack of baseline data provided.</p>

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	<p>their own responsibility for oral health care. (Paper One, p.421-422)</p> <p><b>Paper Two</b>  The data of a larger follow-up research project (2002-2005) comprised 7 counselling periods that were carried out at intervals of 6 months. The number of counselling sessions varied from one to 4 per schoolchild per period.</p> <p>The study included 66 counselling sessions in 2002 and 31 counselling sessions in 2003 with 31 11-13 year old school children. In 2002 the sessions were conducted within one month.</p> <p>In 2002 the counselling sessions were selected on the basis of the aims of the study being behavioural change.</p> <p>In 2003 the needs assessment conversation was based on a structured questionnaire which the schoolchildren were requested to assess their need for change of snacking frequency on a 2-point scale (true or false). These were conducted during a single</p>		<p>2 major categories also emerged for the needs assessment practice; these were schoolchild-determined and counsellor-determined. For the counsellor-determined category this also had subcategories (see Table 1). (Paper Two, p.110).</p> <p>The counsellor explicitly determined and assessed the schoolchildren's need for change of snacking habits, in a few cases there were indications that the schoolchildren's perception of need for change differed from that of the counsellor. In many cases the schoolchildren's needs assessment remained on the level of the counsellor's assessment or advice after the snacking recall. The form of advice that was given was usually very general; more detailed and focussed advice was rarely provided,</p> <p>e.g.</p> <p>General advice: <i>"DH: of course, thinking about that, you could do something about that, of course it would be better, to do something so that the bacteria wouldn't get food, you should try and see how you, how you eat sweet foods".</i></p> <p>More detailed advice: <i>"DH: You could now think about it, eating candy,...try cutting it down a little, have candy as</i></p>	<p>Only one method and no information on triangulation. The authors themselves note (Paper One p.422 para.4) that the dental hygienists may have misinterpreted some of the participants' responses (e.g. by assuming an 'mmm' response to a question was a positive acknowledgement).</p> <p>Limited examples from the counselling sessions are provided.</p> <p>It is not clear whether or not more than one researcher looked at the data</p> <p>Figures are given for responses in places but terms like "many" and "a few" are often used. Extracts of conversations have been included and references are sometimes made to them.</p> <p>The paper does enhance understanding of oral health counselling to a specific group and in that sense is relevant and useful for our study. The authors caution that their theoretical approach may not be the best way to analyse</p>

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	<p>session. (Paper Two, p.109-110).</p> <p><b>By whom:</b> 4 dental hygienists (Paper One, p.421-422), (Paper Two, p.109, para. 4).</p> <p><b>What setting:</b> Finland (Paper One, p.421-422), (Paper Two, p.108, para. 5)</p> <p><b>When:</b> 2002 – 2003. (Paper One, p.421-422), (Paper Two, p.109, para. 5).</p>		<p><i>rarely as possible.</i>" (Paper Two, p111)</p> <p>The counsellor also can be seen to be determining the schoolchild's need for change on his behalf <i>"Then how would you feel if you should try and cut them down a little".</i>(Paper Two, p.111)</p> <p>There are only a few occasions in which the counsellor encourages the school child to participate in assessing the outcomes of the session and considering the association between diet and oral health.</p> <p>In 2003:</p> <ul style="list-style-type: none"> <li>• 8 schoolchildren had made positive changes during the follow-up year and the children were aware of the need for change.</li> <li>• New negative snacking habits had appeared in 8 children.</li> <li>• On the whole most of the children assessed that they still had a need for change of snacking habits in 2003. (Paper Two, p112, para.1 and 2).</li> </ul> <p><b>Conclusions:</b> <b>Paper One</b> The results suggest that the theoretical framework might be useful in constructing and focussing on oral hygiene counselling for school children that concentrates on the personal</p>	<p>schoolchild - dental hygienist oral health practice.</p> <p>The research received ethical approval and informed consent was obtained from all children, their guardians and dental hygienists. However it would have been useful to have some information on how anonymity was maintained and data was stored.</p> <p>Quality and usefulness of Paper Two is better. Study would not have received as a high a score on the basis of Paper One only.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p><b>Paper One</b> Need for improving and developing oral health education to meet the personal needs of the individual. (Paper One, p, 426, para.5)</p> <p><b>Paper Two</b> Once the counsellors have been provided with skills to change their techniques that this may enable the future</p>

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			<p>dynamics of change. (abstract) The study revealed how difficult the practical implementation of counselling can be. Besides planning the content the effective practice of health counselling requires the planning of communication activity. (Paper One, p.424, para. 2)</p> <p>The study showed the how difficult it is to change an irregular pattern of tooth-brushing pattern to a stable and regular pattern while undergoing the changes of adolescents.</p> <p>Barriers to good oral health care were identified as memory problems, and the difficulty of finding time as behavioural changes require time and energy and are long-term processes. (Paper One, p.424, para.2).</p> <p>In this study the session did not reveal the children's needs, aims and readiness for counselling and change in their oral hygiene habits (Paper One, p.425, para.1) although their affirmative responses did seem as if they were.</p> <p><b>Paper Two</b> The results revealed that a thorough needs assessment of schoolchildren's snacking habits provides a foundation for behaviourally focussed counselling.</p> <p>They further reveal that needs</p>	<p>development of more appropriate and effective counselling strategies in the oral health care context. (p.114, para. 4).</p> <p>3 issues related to counselling practice need to be considered:</p> <ul style="list-style-type: none"> <li>• Change of time frame – a lot of focus on past behaviours eg what caused the initial caries.</li> <li>• Salivary lactobacilli were used but this did not direct individualised counselling.</li> <li>• Regarding the ambiguous snacking habits and needs assessment a clearer application of recommendation is needed to address the personal level. (p114-115).</li> </ul> <p><b>Source of funding:</b> Acknowledge the financial assistance of the Ministry of Social Affairs and Health and the Finnish Cultural Foundation. (p.427)</p>

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			<p>assessment of change that involves schoolchildren in counselling is a complex and demanding process that entails a number of concerns.</p> <p>Changing snacking habits is a difficult and prolonged process that always needs to be considered in the individual and environmental life context.</p> <p>Little evidence was shown for the school children being invited to self-assess their information, however it is the counsellor was speculative that they did participate.</p> <p>Often the assessment of the schoolchildren's need for change was counsellor controlled.</p> <p>In concise answers from children their personalised and detailed needs assessment for change remained incomplete.</p> <p>Need for mutual assessment before the change process can begin.</p> <p>Counsellors need to change their role from normative and curative to empowering and participating approaches. The current style of counselling is associated with lack of time, existing professional predisposition and skills and the child's inexperience to participation.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Lees, A., Rock, W.P., and Orth, D</p> <p><b>Year:</b> 2000</p> <p><b>Citation:</b> Adele Lees, W. P. Rock, and D. Orth., A Comparison Between Written, Verbal, and Videotape Oral Hygiene Instruction for Patients with Fixed Appliances. Journal of Orthodontics, 2000; 27(4): p. 323-328</p> <p><b>Aim of Study:</b> The aims of the present study were to make a videotape to teach oral hygiene to patients wearing fixed orthodontic appliances, and to test the effectiveness of such instruction against written instructions and one-to-one verbal</p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed): <b>NR – assumed British</b></p> <p><b>Setting:</b> UK [assumed]</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population:</b> Participants who had been fitted with a lower fixed appliance during the previous 3 months..</p>	<p><b>Method of allocation:</b> Sixty-five subjects who had been fitted with a lower fixed appliance during the previous three months were divided into three groups by a process of physical randomisation in which numbers were drawn from a hat. Every patient had a similar Straight-Wire appliance (A Company) and all brackets were bonded by the same clinician using Right On (T.P Company) orthodontic adhesive.</p> <p>Before the instructions (described below) the dental health knowledge of each subject was tested by means of a questionnaire which related to diet and oral health care, especially in relation to fixed appliance wear.</p> <p><b>Report how confounding factors were minimised:</b> NR</p> <p><b>Programme/Intervention description:</b></p> <p><b>Written intervention:</b></p> <p>Before instruction, each subject was examined for plaque and</p>	<p><b>Oral health outcomes (clinical):</b></p> <p><b>Outcome name:</b> Plaque scores</p> <p><b>Outcome definition:</b> NR</p> <p><b>Outcome measure:</b> Plaque index was based upon that of Greene and Vermillion (1960)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Plaque was scored for the five boxes alongside or gingival to the bracket to give a possible maximum mouth score of 15</p> <p><b>Time points measured:</b> Pre and post study (8 weeks)</p> <p><b>Outcome name:</b> Gingival index scores</p> <p><b>Outcome definition:</b> NR</p> <p><b>Outcome measure:</b> Gingival index was based upon that of Loe and Silness (1963)</p> <p><b>Outcome measure</b></p>	<p><b>Oral health (clinical) results:</b></p> <p><b>Plaque scores</b> (Maximum score, Pre-education score [SD], Post education score [SD], Percentage change)</p> <p><b>Written</b> Adjacent to bracket: 6, 5 [1.48], 5 [1.41], 0 Gingival to bracket: 9, 5.14 [2.94], 5.29 [2.72], +2.9 Total buccal: 15, 10.14 [3.66], 10.9 [3.29], +1.48</p> <p><b>Video</b> Adjacent to bracket: 6, 5.55 [0.86], 5.09 [1.38], -8.29 Gingival to bracket: 9, 6.23 [2.37], 5.23 [2.76], -16.1 Total buccal: 15, 11.77 [2.33], 10.32 [3.33], -12.32</p> <p><b>Verbal</b> Adjacent to bracket: 6, 5.05 [1.46], 4.41</p>	<p><b>Limitations identified by author:</b> In the present study, subjects in Group 1 and 2 (written and video respectively) had access to either written or video material during the whole period of the study. No attempt was made to measure the extent to which either was used since it would have been difficult to do this reliably, and the whole objective of the study was to measure the effectiveness of three instructional methods that were designed to be used in different ways.</p> <p><b>Limitations identified by review team:</b> The setting was not described at all, meaning full replication would be difficult. The</p>

<p>instructions in improving knowledge, oral hygiene standard, and gingival health.</p> <p><b>Study Design:</b> RCT [Not stated explicitly]</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity(++, +, or -):</b> -</p>	<p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> Participants who had been fitted with a lower fixed appliance during the previous 3 months. Every patient had a similar Straight-Wire appliance (A Company) and all brackets were bonded by the same clinician using Right On (T.P. Company) orthodontic adhesive.</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> NR</p>	<p>gingival index scoring on the basis of 3 teeth, lower canine, lower left central incisor and lower left first or second premolar.</p> <p>Plaque index was based upon that of Green and Vermillion (1960).</p> <p>Gingival index was based upon that of Loe and Silness (1963).</p> <p>Before the instructions (described below) the dental health knowledge of each subject was tested by means of a questionnaire which related to diet and oral health care, especially in relation to fixed appliance wear.</p> <p>Group 1 subjects then received 2 sheets of written information, specially designed for the study. There were 6 main sections: possible problems in the early stages, appliance care and diet, plaque disclosure and cleaning, routine dental care, and emergency resolution. Ethical and legal advice was obtained from the Medical Protection Society in the preparation of the text.</p> <p><b>Video intervention:</b> Before instruction, each subject</p>	<p><b>validated:</b> NR</p> <p><b>Unit of measurement:</b> Grades of 0-3 denoting absent, mild, moderate and severe inflammation</p> <p><b>Time points measured:</b> Pre and post study (8 weeks)</p> <p><b>Behavioural outcomes:</b></p> <p><b>Outcome name:</b> Oral health knowledge</p> <p><b>Outcome definition:</b> The dental health knowledge of each subject was tested by means of a questionnaire which included open questions relating to diet and oral health care, especially in relation to fixed appliance wear.</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Answers were scored according to an aide-memoire prepared beforehand which listed 20 expected responses, each of which was to be</p>	<p>[1.53], -12.7 Gingival to bracket: 9, 6.14 [2.98], 4.68 [3.32], -23.8 Total buccal: 15, 11.18 [3.63], 9.09 [4.05], -18.7</p> <p>For the written instruction group, scores changed little over the study period. Total plaque scores fell in the other 2 groups (video and verbal) especially for plaque gingival to the bracket where reductions were around double those found higher up the teeth. However, ANOVA revealed <b>no significant main effects or interactions</b> at <math>p = 0.05</math>, although the main effect 'Before and after instruction' had <math>p = 0.058</math>, very close to significance.</p> <p><b>Gingival Index Scores</b> (Maximum score, Pre-education score [SD], Post education score [SD], Percentage change)</p>	<p>description of the questionnaire and the concept it actually measured was lacking. As was any reported validity for the questionnaire. If a more suitable outcome measure was used, there is a possibility that favourable effects would have been found.</p> <p><b>Evidence gaps:</b> As no significant main effects or interactions were found, yet some results being close to significance, it would be beneficial to explore the effects of video and verbal instructions further.</p> <p><b>Source of funding:</b> NR</p>
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		<p>was examined for plaque and gingival index scoring on the basis of 3 teeth, lower canine, lower left central incisor and lower left first or second premolar.</p> <p>Plaque index was based upon that of Green and Vermillion (1960).</p> <p>Gingival index was based upon that of Loe and Silness (1963).</p> <p>Before the instructions (described below) the dental health knowledge of each subject was tested by means of a questionnaire which related to diet and oral health care, especially in relation to fixed appliance wear.</p> <p>Group 2 subjects were given a specially made video film 8 minutes long, which they took home and kept for the duration of the study. The title of the film was <i>Brace Yourself</i> and included in the introduction were shots of a theme park ride, rather like the 'train-tracks' analogy applied to fixed appliances by West Midlands children. Special effects and musical backing were also used to improve the presentation. The script was based upon information included on the</p>	<p>mentioned specifically in the instructions given to the patient.</p> <p><b>Time points measured:</b> Pre and post study (8 weeks)</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): Numeric calibration data were compared using the Kappa statistic, whilst ordinal scores were compared by means of chi-square. GLM in Minitab was used for ANOVA of main study inter-group differences.</p>	<p>Written: 9, 2.05 [1.86], 2.62 [1.96], +27.8</p> <p>Video: 9, 2.32 [1.76], 1.91 [2.2], -17.68</p> <p>Verbal: 9, 2.73 [2.43], 2.14 [1.58], -22.62</p> <p>Gingival index scores increased by 28% in the written instruction group and fell in the other 2 groups.</p> <p><b>ANOVA showed no main effects or interactions.</b></p> <p><b>Behavioural results:</b></p> <p><b>Questionnaire</b> (Maximum score, Pre-education score [SD], Post education score [SD], Percentage change)</p> <p>Written: 20, 7.93 [2.65], 7.36 [3.35], -7.2</p> <p>Video: 20, 7.84 [2.41], 9.23 [1.39], +17.2</p> <p>Verbal: 20, 6.8 [3.1], 8.34 [3.00], +22.6</p> <p><b>No increase above was significant</b></p>	
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		<p>written information sheets. Still frames from the video are shown as Figures 2–4</p> <p><b>Verbal Intervention:</b></p> <p>Before instruction, each subject was examined for plaque and gingival index scoring on the basis of 3 teeth, lower canine, lower left central incisor and lower left first or second premolar.</p> <p>Plaque index was based upon that of Green and Vermillion (1960).</p> <p>Gingival index was based upon that of Loe and Silness (1963).</p> <p>Before the instructions (described below) the dental health knowledge of each subject was tested by means of a questionnaire which related to diet and oral health care, especially in relation to fixed appliance wear.</p> <p>Group 3 subjects were each seen by a dental hygienist on one occasion who gave oral health advice according to written instructions based upon those given to the Group 1 subjects. The visit was timed to last 30 minutes. Several hygienists took part in the study</p>		<p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control): <b>NR</b></p> <p><b>Conclusion:</b> Analysis of variance revealed no significant main effects or interactions at <math>p = 0.05</math>, although the difference in the plaque index scores before and after instruction was close to significance.</p>	
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		<p>and to help the consistency of advice given to the subjects all of the hygienists had read the written instructions and watched the video.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 65</b></p> <p><b>Written Intervention Group N = 21</b></p> <p><b>Video Intervention Group N = 22</b></p> <p><b>Verbal Intervention Group N = 22</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): <b>NR</b></p> <p><b>Study sufficiently powered</b> (power calculations and provide details): <b>NR</b></p>			
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Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Lepore, L. et al</p> <p><b>Year:</b> 2011</p> <p><b>Citation:</b> Lepore, L., Yoon, R.K., Chinn, C.H., and S. Chussid. Evaluation of Behaviour Change Goal-Setting Action Plan on Oral Health Activity and Status. New York State Dental Journal. 2011. 77; 6:43-48</p> <p><b>Country of study:</b> NR</p> <p><b>Aim of Study:</b> The aim of the study was to determine if a “report card-like” oral health action plan was effective in improving oral health behaviours in a sample of patients aged 1 to 6 years.</p> <p>Exploring: 1. Whether it is</p>	<p><b>Source Population(s):</b> Unclear: Although study was approved by Columbia University (New York) – so probably the US</p> <p><b>Setting:</b> Clinical (unclear)</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> 1 – 6 years. Mean age of 3 years and 90% were 2 to 5 years.</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> Children</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> Unclear – only says ‘participants were divided randomly into control and intervention groups’.</p> <p><b>Report how confounding factors were minimised:</b> NR</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> Patients received intraoral and extraoral examinations, a dental prophylaxis and a topical fluoride application by one trained dentist examiner. Examination data collected included DMFS, gingival health and plaque scores.</p> <p>Parents were questioned regarding the oral hygiene and diet behaviour of the child in order to fulfil the six survey topics (frequency of toothbrushing with a fluoridated dentifrice, parent-assisted toothbrushing, bottle use, sippy cup use, frequency of juice consumption and frequency between-meal snacking)</p>	<p>It is unclear what the unit of measurement is for clinical outcomes - could be score of 0, 1, 2 (Score of 0 (low), 1 (moderate) or 2 (high) caries risk) as it is for the behavioural outcomes</p> <p><b>Outcomes:</b></p> <p><b>Clinical:</b></p> <p><b>Outcome name:</b> S. mutans</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> Plaque score</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p>	<p><b>Oral health (clinical) results:</b></p> <p><i>S. mutans:</i></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 0.700</p> <p><b>End point:</b> 0.540</p> <p><b>Change:</b> 0.432</p> <p><b>p value:</b> 0.000</p> <p><b>Control group(s):</b></p> <p><b>Baseline:</b> 0.660</p> <p><b>End point:</b> 0.690</p> <p><b>Change:</b> -0.031</p> <p><b>p value:</b> 0.745</p> <p><b>Plaque score:</b></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 1.080</p> <p><b>End point:</b> 0.110</p> <p><b>Change:</b> 0.973</p> <p><b>p value:</b> 0.000</p> <p><b>Control group(s):</b></p> <p><b>Baseline:</b> 0.660</p> <p><b>End point:</b> 0.560</p> <p><b>Change:</b> 0.094</p> <p><b>p value:</b> 0.184</p>	<p><b>Limitations identified by author:</b></p> <p>There was disparity in the control and intervention groups at initial examination in the areas of plaque score and S. mutans level. Pearson chi squared analysis revealed that the intervention group had significantly higher S. mutans level and plaque score averages at the initial visit. However, since this study is evaluating the improvement of the oral health measures, the change noted within the groups between the initial and follow-up visits is still statistically significant.</p> <p>Sample size: a larger sample size would allow for better randomisation and more equivalent sample groups.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>feasible for clinicians to engage parents of patients with ECC risk factors in collaborative goal-setting and concrete action planning during the initial dental evaluation visit, and 2. Determining the effectiveness of a personalised detailed oral health action plan in improving parent-patient oral health behaviours and oral health status of the child.</p> <p><b>Study Design:</b> Quasi-experimental design. Participants were divided randomly into control and intervention groups.</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> -</p>	<p><b>Eligible population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> Paediatric-child patients (unclear how recruited to study)</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> Paediatric-child patients aged between 1 and 6</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> Potential</p>	<p>Patients in both groups received routine, verbally dispensed oral hygiene and diet instructions targeting the specific needs of the patient. In addition they received a personalised oral health action plan (Figure 1). The action plan consisted of an assessment of the patient's current caries risk and a list of suggestions on how to improve that status. The parent and dentist together chose one particular suggestion they felt was achievable.</p> <p>Patients returned after 2 months and again received a dental examination and parental survey regarding oral hygiene and diet.</p> <p><b>Theoretical basis:</b> No</p> <p><b>By whom:</b> Examinations = trained dentist examiner, Intervention = Dentist</p> <p><b>To whom:</b> Parent and child</p> <p><b>How delivered:</b> Verbal instructions and visual oral health action plan</p> <p><b>When/where:</b> Clinic</p> <p><b>How often:</b> Examination at baseline visit and follow up 2 months later. Intervention at baseline</p> <p><b>How long for:</b> Follow up after 2 months</p>	<p><b>Outcome name:</b> dmft</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> Gingival health</p> <p><b>Outcome measure:</b> Exam</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Behavioural:</b></p> <p><b>Outcome name:</b> No. times brushing per day</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1 (moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and</p>	<p><i>dmft:</i></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 1.320</p> <p><b>End point:</b> 1.320</p> <p><b>Change:</b> 0.000</p> <p><b>p value:</b> -</p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 0.440</p> <p><b>End point:</b> 0.440</p> <p><b>Change:</b> 0.000</p> <p><b>p value:</b> -</p> <p><i>Gingival health:</i></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 0.590</p> <p><b>End point:</b> 0.140</p> <p><b>Change:</b> 0.459</p> <p><b>p value:</b> 0.000</p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 0.500</p> <p><b>End point:</b> 0.500</p> <p><b>Change:</b> 0.000</p> <p><b>p value:</b> 1.000</p> <p><b>Behavioural results:</b></p> <p><i>No. brushing/day:</i></p>	<p>Observation time: Increasing the observation time to a six-month follow-up may have resulted in a more complete study.</p> <p>Potential examiner bias: Since this was a single blind study, upon follow-up examination experimenter bias has to be considered and results may be skewed.</p> <p><b>Limitations identified by review team:</b></p> <p>Source population not well described – unclear whether the eligible population is representative of the source population.</p> <p>Randomisation process not clear – a quasi-experimental design, but participants were randomised.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p>examiner bias: Since this was a single blind study, upon follow-up examination experimenter bias has to be considered and results may be skewed.</p>	<p><b>Control/Comparator description:</b>  <b>What was delivered:</b> Patients received intraoral and extraoral examinations, a dental prophylaxis and a topical fluoride application by one trained dentist examiner. Examination data collected included DMFS, gingival health and plaque scores.</p> <p>Parents were questioned regarding the oral hygiene and diet behaviour of the child in order to fulfil the 6 survey topics (frequency of toothbrushing with a fluoridated dentifrice, parent-assisted toothbrushing, bottle use, sippy cup use, frequency of juice consumption and frequency between-meal snacking) Patients in both groups received routine, verbally dispensed oral hygiene and diet instructions targeting the specific needs of the patient.</p> <p>Patients returned after 2 months and again received a dental examination and parental survey regarding oral hygiene and diet.</p> <p><b>By whom:</b> Trained dentist examiner and dentist</p> <p><b>To whom:</b> Parent and child</p> <p><b>How delivered:</b> Verbally</p>	<p>post intervention (start and end point)</p> <p><b>Outcome name:</b> Who brushes</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1 (moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> Bottle use</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1 (moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> Sippy cup use</p> <p><b>Outcome measure:</b></p>	<p><b>Intervention group(s):</b>  <b>Baseline:</b> 0.730  <b>End point:</b> 0.000  <b>Change:</b> 0.730  <b>p value:</b> 0.000</p> <p><b>Control group(s):</b>  <b>Baseline:</b> 0.690  <b>End point:</b> 0.060  <b>Change:</b> 0.625  <b>p value:</b> 0.000</p> <p><i>Who brushes:</i></p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> 0.950  <b>End point:</b> 0.050  <b>Change:</b> 0.892  <b>p value:</b> 0.000</p> <p><b>Control group(s):</b>  <b>Baseline:</b> 1.000  <b>End point:</b> 0.190  <b>Change:</b> 0.813  <b>p value:</b> 0.000</p> <p><i>Bottle Use:</i></p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> 0.570  <b>End point:</b> 0.030  <b>Change:</b> 0.541  <b>p value:</b> 0.000</p>	<p><b>Evidence gaps:</b>  It is hoped the results of this pilot study will promote the completion of similar, larger studies focusing on the use of goal-setting action planning in the dental office.</p> <p><b>Source of funding:</b>  NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p><b>When/where:</b> Clinic</p> <p><b>How often:</b> Baseline visit and follow up 2 months later.</p> <p><b>How long for:</b> Follow up after 2 months</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 69</b></p> <p><b>Intervention group N = 37</b></p> <p><b>Control Group N = 32</b></p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b> NR</p> <p><b>Study sufficiently powered (power calculations and provide details):</b> NR</p>	<p><b>Questionnaire</b></p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1 (moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> No. juice/day</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1 (moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Outcome name:</b> No. snacks/day</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score of 0 (low), 1</p>	<p><b>Control group(s)</b></p> <p><b>Baseline:</b> 0.250</p> <p><b>End point:</b> 0.000</p> <p><b>Change:</b> 0.250</p> <p><b>p value:</b> 0.018</p> <p><i>Sippy cup use:</i></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 0.540</p> <p><b>End point:</b> 0.080</p> <p><b>Change:</b> 0.459</p> <p><b>p value:</b> 0.000</p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 0.220</p> <p><b>End point:</b> 0.000</p> <p><b>Change:</b> 0.219</p> <p><b>p value:</b> 0.006</p> <p><i>No. juice/day:</i></p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 0.730</p> <p><b>End point:</b> 0.110</p> <p><b>Change:</b> 0.622</p> <p><b>p value:</b> 0.000</p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 0.530</p> <p><b>End point:</b> 0.090</p> <p><b>Change:</b> 0.438</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>(moderate) or 2 (high) caries risk</p> <p><b>Time points measured:</b> Pre and post intervention (start and end point)</p> <p><b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b> ITT - NR Data collected at the initial and follow-up visits were compared and analysed using a paired t-test and Pearson chi square analysis.</p>	<p><b>p value:</b> 0.000</p> <p><b>No. snacks/day:</b></p> <p><b>Intervention group(s):</b> <b>Baseline:</b> 0.300 <b>End point:</b> 0.030 <b>Change:</b> 0.270 <b>p value:</b> 0.006</p> <p><b>Control group(s)</b> <b>Baseline:</b> 0.250 <b>End point:</b> 0.030 <b>Change:</b> 0.219 <b>p value:</b> 0.006</p> <p><b>Attrition details:</b> NR</p> <p><b>Conclusion:</b> Collaborative goal-setting between clinicians and parents of child patients for improved health behaviours is viewed favourably by parents and has a positive impact on clinical outcomes, evidenced by a decrease in plaque and gingivitis and S mutans counts. Considering this, behaviour change goal-setting action</p>	

<b>Study details</b>	<b>Population and setting</b>	<b>Method of allocation to intervention/control</b>	<b>Outcome definitions and method of analysis</b>	<b>Results</b>	<b>Notes by review team</b>
				plans may be a promising technique for assisting parents in improving child oral health status and behaviours.	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<b>Author:</b> Levesque, M. C. et al	<b>Study design:</b> Qualitative research based on open-ended interview questions, which were videotaped (1045, para.4). “service-user” action research (p.1051, para.6)	<b>Population the sample was recruited from:</b> Individuals in Montreal, living on or having experienced welfare.	<b>Brief description of method and process of analysis [including analytic and data collection technique]:</b>  A near final cut of the edited video underwent a series of pretests via presentation to informal gatherings of small groups of dental hygienists (n=5) and dental students (n=3). 4 dentists also viewed and gave feedback on the video. Feedback was obtained in person from 2 of the dentists. The video was mailed to the other 2 dentists, who mailed back their comments. The feedback obtained, much of which was positive, was presented and discussed in the fourth workshop. This process led to some final editorial changes and, most significantly, to a consensus on the need for additional accompanying information in the form of a viewing guide, which is presently under development. The final edition of the thematically organised video was viewed by all 6 interviewees, who approved the content and signed an agreement for its use for educational purposes and with health professionals in various settings. Also, a viewing session was organised by the province of Quebec Anti-Poverty Coalition with a group of 8 persons living on welfare not directly involved in the project. The group unanimously identified with the perspectives and experiences related by the 6 individuals featured.	<b>Limitations identified by author:</b>  Limitations not discussed but some challenges of the research are referred to: ...the collaborative approach is not without challenge. It is at times complex and even complicated as it supposes the establishment and upkeep of many relationships based on trust, respect, and ongoing communication (p.1052, para.2).

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
	<p>health agency. In the fall of 2006, 10 individuals representing these 4 sectors began collaborating on the “Listening to Each Other” knowledge translation project (see Table 1). The purpose of this group was to develop a DVD to provide a means for people living on welfare—given their particular vulnerability to societal prejudices and very low socioeconomic position—to voice their opinions, perceptions, and experiences related to poverty and oral health.</p> <p>The decision to gather video testimony from people living on welfare was founded on the assumption that access to the insider perspective might contribute compelling and socially valid knowledge directly linked to the practice of dentistry.</p> <p>Pre-interviews were conducted in which these collaborators shared information about their lives in general, their oral health, and their relationships with dental professionals. Once the participants who agreed to be filmed were recruited (6 in total), open-ended interview questions were then developed. These interview questions were based on the</p>	<p>acquaintances of one of the researchers.</p> <p><b>How many participants recruited:</b> 6 participants provided consent to be filmed (2 of whom were also project partners)</p> <p><b>Sample characteristics:</b>  <b>Age:</b> NR  <b>Sex:</b> 4 females, 2 males  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> Montreal  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic position:</b> very low  <b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>The importance of Teeth and Oral Health:</p> <ul style="list-style-type: none"> <li>- Some participants stated their preference for keeping their natural teeth – even at the cost of pain – and avoiding extraction and prosthetics</li> <li>- Other participants made light of tooth loss and expressed that access to root canals and other sophisticated forms of intervention remain in the realm of the socioeconomically advantaged.</li> </ul> <p>“Years of bad life...rough on your teeth... They’re the first to go when you lead a bad life”</p> <p>Relationships with Oral Health Professionals:</p> <ul style="list-style-type: none"> <li>- Empathy: one interviewee stated that they confide in the dentist or doctor when things go wrong but also highlighted the deleterious effect that a lack of empathy or perceived prejudice could have on her inclination to disclose information related to her oral health and overall well-being.</li> <li>- The front desk: “I was always treated normally. But I find it embarrassing (being on welfare)”</li> </ul>	<p>Only one method used (interviews)</p> <p>Short conclusion and there is no reference to limitations of the study.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>NR</p> <p><b>Source of funding:</b>  This project was funded by the Fonds de la recherche en santé du Québec (FRSQ)—Réseau de recherche en santé buccodentaire et osseuse (RSBO). This project is currently funded by the Quebec MDEIE.</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
	<p>participants' experiences and perceptions as well as the themes identified in the workshops.</p> <p><b>By whom:</b></p> <p>Group members:</p> <p>3 experts on poverty:</p> <ul style="list-style-type: none"> <li>-province of Quebec Anti-Poverty Coalition representatives (2)</li> <li>-former welfare recipient (1)</li> </ul> <p>4 academics/researchers:</p> <ul style="list-style-type: none"> <li>-McGill University Faculty of Dentistry (3)</li> <li>-University of Montreal Faculty of Dentistry (1)</li> </ul> <p>1 Public Health Agency representative:</p> <ul style="list-style-type: none"> <li>-Montreal-Center Public Health Agency (1)</li> </ul> <p>2 professional orders in dentistry:</p> <ul style="list-style-type: none"> <li>-Quebec Order of Dentists (1)</li> <li>-Quebec Order of Dental Hygienists (1)</li> </ul> <p><b>What setting:</b> Interviewees were interviewed in a location chosen by them (where these locations are not reported).</p> <p><b>When:</b> (First workshops Nov 2006 – Oct 2007). DVD filming began after the first workshop and continued for approx. 6 months (Jan – June 2007).</p>		<ul style="list-style-type: none"> <li>- Discretion: general agreement that patients should be treated confidentially when dealing with participants on welfare</li> <li>- But expectations for discretion, a positive front desk and empathy did not occur in the testimony of all 6 participants.</li> <li>- Interviewees also expressed the importance of communication and being involved in their treatment decision making. It was pointed out that dental health professionals should not automatically assume that someone on welfare cannot afford a more expensive intervention, as some patients may be willing to borrow money for treatment. "When the time came to repair a broken filling, he didn't ask me my opinion. He decided, as he was injecting me, to use an amalgam. It was difficult to talk and tell him I wanted a composite. . . I would have liked for him to ask me what I wanted."</li> <li>- When asked what she most wanted dental professionals to know about people who receive welfare, a participant simply stated: "Just don't forget, the person before you may have been a worker before becoming a welfare recipient."</li> </ul> <p>- It appears that, in general, most</p>	

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			<p>interviewees consider the view dental professionals and staff hold of them to be important and that this view inspires or taints the valued dimensions of empathy, reception, communication, and discretion.</p> <p>Barriers to Accessing Dental Services:</p> <ul style="list-style-type: none"> <li>- Dental insurance: the interviewees lamented both limitations and delays in coverage offered and how these impact their behaviours. "You know, dental care is covered when you're on welfare, but only after you've been on it for at least 6 months,"</li> <li>- Fear of limited coverage: "Nowadays I'm afraid of going to the dentist and of finding out that something is wrong, that I need some work that is not covered . . . and that I'll be faced with the decision: do I borrow to pay for the treatment, or do I just put up with the problem . . . ?..."</li> <li>- Transportation: highlighted as a financial and organisational issue for individuals living outside densely populated urban areas.</li> <li>- Barriers in accessing information on dental coverage and clinics: "... 'Is this covered on welfare? Is this treatment paid for?' . . . There is nowhere I can go to check on what exactly is covered</li> </ul>	

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			<p>by the welfare programme. And I find it embarrassing to ask.”</p> <p>Other results (not relating to oral health): Everyday Life on Welfare:</p> <ul style="list-style-type: none"> <li>- Social isolation: interviewees commented on their inability to keep up with social standards. One participant expressed: “Sometimes there are activities I don’t do because I don’t want people to ask me: ‘So what do you work in?’ because I presently don’t work.”</li> <li>- Shame: Several interviewees explained how their own preconceptions towards people on welfare compound the shame they feel when others look down on them, whether at the welfare agency office or among community acquaintances.</li> <li>- Pride: interviewees expressed positive feelings when talking about things in their life of which they are proud.</li> </ul> <p>Poverty pathways:</p> <ul style="list-style-type: none"> <li>- Circumstances that led the individual to be on welfare: combination of burnout, disease, single parenting, separation, depression, and job loss.</li> <li>- Complexity of personal characteristics highlighted...</li> </ul>	

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			<p><b>Conclusions:</b>            Reducing the burden of oral health disease in socioeconomically disadvantaged populations will require solutions that address the many complexities of the access to care challenge. Through the development of an educational tool for improving knowledge and increasing dental professionals' competence in interacting effectively with the underprivileged, this project contributes a promising approach to addressing the relational dimension of the problem.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Little SJ Hollis JF, Stevens VJ, Mount K, Mullooly JP, Johnson BD</p> <p><b>Year:</b> 1997</p> <p><b>Citation:</b> Little, S.J., et al. Effective group behavioural intervention for older periodontal patients. <i>Journal of periodontal research</i>, 1997. 32, 315-25.</p> <p><b>Country of study:</b> USA (developed country)</p> <p><b>Aim of Study:</b> Assess the effect of a group-based behaviour modification intervention on oral hygiene skills, adherence and clinical outcomes for older periodontal patients.</p>	<p><b>Source</b>  <b>Population(s):</b> Male and female patients between the ages of 50 and 70 year with mild to moderate periodontal disease were the target population.</p> <p><b>Setting:</b> This study was conducted in the Kaiser Permanente Dental Care Program (KPDCP), a dental HMO currently providing comprehensive oral health care to 150,000 members in 12 large dental clinics in northwest Oregon and southwest Washington, USA.</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b>  <b>Age:</b> Mean age of both control and intervention groups was 56.9</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): NR</p> <p><b>Report how confounding factors were minimised:</b> Contamination effects not reported. No statistically significant baseline differences were found.</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> The intervention consisted of five 90 minute oral hygiene classes called Freedom from Plaque (FFP). The sessions included: bleeding points feedback followed by group meetings, where participants discussed their difficulties, setbacks and successes, received oral hygiene skills training and were helped to develop behaviour change strategies.</p> <p><b>Theoretical basis:</b> Testing the theory that group-based oral hygiene intervention can be</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Plaque</p> <p><b>Outcome definition:</b> Plaque was scored as present or absent after disclosing using an adaptation of the Poshadley Haley Plaque Index.</p> <p><b>Outcome measure:</b> Dichotomous: present or absent (%)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Baseline and four month follow-up</p> <p><b>Outcome name:</b> Gingival bleeding</p> <p><b>Outcome definition:</b> Gingival bleeding was recorded using the</p>	<p>For each outcome report <b>Means, SDs, p-values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b></p> <p><b>Outcome:</b> Plaque (whole mouth)</p> <p>Intervention group(s): Baseline (whole mouth): 82% End point (whole mouth): 76% Baseline (&lt;3mm): 79% End point (&lt;3mm): 71% Baseline (3-6mm): 94% End point (3-6mm): 89% Baseline (&gt;6mm): 93% End point (&gt;6mm): 92%</p> <p>Control group(s): Baseline (whole mouth): 80% End point (whole mouth): 80% Baseline (&lt;3mm): 75% End point (&lt;3mm): 76% Baseline (3-6mm): 93% End point (3-6mm): 92% Baseline (&gt;6mm): 96% End point (&gt;6mm): 99%</p>	<p><b>Limitations identified by author:</b> The limitations of this study include its focus on older, volunteer periodontal patients who may have been more motivated than the general population. It remains to be determined if this group intervention would be effective for other age groups and delivery settings.</p> <p><b>Limitations identified by review team:</b> Article quotes number of members and their location but there is no information on population demographics. This could be an issue as the "members" are likely to be people with a higher income who can access oral healthcare. There may be also sources</p>

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<p><b>Study Design:</b> Parallel RCT – follow up data were collected for both groups 4 months after randomisation.</p> <p><b>Quality Score (++, +, or -):</b> - (3 of the questions scored NR while the average of the remaining 3 questions was +)</p> <p><b>External Validity(++, +, or -):</b> ++</p>	<p><b>Sex:</b> 50% of the intervention group and 34% of the control group were female.</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> northwest Oregon and southwest Washington, USA</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Target population between 50 and 70 years old. Final eligibility requirements included having at least 6 sites with periodontal pockets between 4 and 7 mm and evidence of bleeding upon probing</p>	<p>more effective than individual approaches. Group intervention allows more efficient use of interventionists' time and has the benefit of the normative power inherent in small peer-group settings. Applied the principles of behavioural self-management.</p> <p><b>By whom:</b> Dental Hygienist delivered bleeding points feedback but it's not clear who delivered group education classes.</p> <p><b>To whom:</b> 54 participants</p> <p><b>How delivered:</b> Group sessions.</p> <p><b>When/where:</b> Evening, with transport offered for those who needed it.</p> <p><b>How often:</b> NR</p> <p><b>How long for:</b> 90 minutes each</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Usual dental treatment</p> <p><b>By whom:</b> N/A</p> <p><b>To whom:</b> 53 participants</p> <p><b>How delivered:</b> N/A</p> <p><b>When/where:</b> N/A</p> <p><b>How often:</b> N/A</p>	<p>Loe and Silness Gingival Index but scored as "no bleeding" or "bleeding" after skimming with slight lateral pressure along the upper 2 mm of the sulcus with a periodontal probe.</p> <p><b>Outcome measure:</b> Dichotomous: "no bleeding" or "bleeding" (%)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p> <p><b>Outcome name:</b> Bleeding on Probing</p> <p><b>Outcome definition:</b> Scored as "no bleeding" or "bleeding" after skimming with slight lateral pressure along the upper 2 mm of the sulcus with a periodontal probe -</p> <p><b>Outcome measure:</b> Dichotomous: "no bleeding" or</p>	<p>Net change scores (change in intervention group minus change in control group – positive score indicates greater improvement in intervention group or less of a decline):</p> <p>Whole mouth – 7 percentage points (pp.) p=0.002</p> <p>&lt; 3mm – 8 pp p=0.001</p> <p>3-6mm – 5pp p=0.062</p> <p>&gt;6mm – 3pp p=0.546</p> <p><b>Outcome:</b> Gingival bleeding</p> <p>Intervention group(s): Baseline (whole mouth): 9% End point (whole mouth): 4% Baseline (&lt;3mm): 7% End point (&lt;3mm): 3% Baseline (3-6mm): 14% End point (3-6mm): 7% Baseline (&gt;6mm): 13% End point (&gt;6mm): 0%</p> <p>Control group(s) Baseline (whole mouth): 10% End point (whole mouth): 10%</p>	<p>of bias in terms of ethnicity.</p> <p>The method of selection is well described and the inclusion and exclusion criteria are explicit. However there is no information comparing the characteristics of those who agreed to participate and those who did not, to judge whether any bias exists.</p> <p>The dental hygiene rater, who assessed all the clinical and skills assessment measures at baseline and follow-up, was blind to group assignment. However there is no information on participant blinding.</p> <p>It is not clear whether any members of the intervention and control groups went to the same dental</p>

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	<p>and/or gingival inflammation.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> Not reported. The population was drawn from KPDCP members and there is no information on their demographics. As mentioned it could be that certain socio-economic or ethnic groups may be under-represented.</p> <p><b>Inclusion Criteria:</b> Not reported separately to eligible population.</p> <p><b>Exclusion Criteria:</b> Potential subjects were excluded if they had physical limitations interfering with manual dexterity, fewer than 18 teeth,</p>	<p><b>How long for:</b> N/A</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 107</b>  <b>Intervention group N = 54</b>  <b>Control Group N = 43</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): The treatment groups did not differ significantly at baseline in mean age, smoking status, dental care utilisation, self-reported flossing and flossing skills.</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): Overall power not reported. Pocket depth and attachment loss were considered secondary outcome measures due to the lack of power to detect significant changes. For the other clinical outcomes the paper states that because the number of sites in the &gt;6mm categories was small power was extremely limited.</p>	<p>“bleeding” (%)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p> <p><b>Outcome name:</b> Pocket depth</p> <p><b>Outcome definition:</b> Not clear</p> <p><b>Outcome measure:</b> Pocket depth and attachment loss were measured with the Florida probe system, an electronic, pressure-sensitive probe. Bleeding after probing for pocket depth was recorded when haemorrhaging was present after probing each quadrant for the first time.</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> mm</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p>	<p>Baseline (&lt;3mm): 9%  End point (&lt;3mm): 8%  Baseline (3-6mm): 15%  End point (3-6mm): 14%  Baseline (&gt;6mm): 19%  End point (&gt;6mm): 15%</p> <p>Net change scores (change in intervention group minus change in control group – positive score indicates greater improvement in intervention group or less of a decline):  Whole mouth – 5 percentage points (pp.)  p=0.001  &lt; 3mm – 4 pp p=0.001  3-6mm – 7pp p=0.008  &gt;6mm – 9pp p=0.464</p> <p><b>Outcome:</b> Bleeding on probing</p> <p>Intervention group(s):  Baseline (whole mouth): 24%  End point (whole mouth): 15%  Baseline (&lt;3mm): 16%  End point (&lt;3mm): 11%  Baseline (3-6mm): 50%  End point (3-6mm): 29%  Baseline (&gt;6mm): 83%</p>	<p>clinic so contamination is a possibility.</p> <p>The study goal was to test a group based behavioural intervention model - delivered through 5 90 minute sessions. However prior to attending each session members of the intervention group had their bleeding points assessed by a hygienist who then helped the patient learn how to clean specific problem areas. This support was not provided to members of the control group who received only the usual dental treatment.</p> <p>Consequently it is possible that relative improvement in oral health amongst the intervention group may in part reflect these measures rather than the group</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p>hepatitis B, diabetes mellitus or immunodeficiency, or if they were taking medications known to affect inflammation of gingival tissues, such as phenytoin, antiseizure medications, steroids, hormone medications or required prophylactic antibiotic premedication.</p> <p>Also excluded were patients who had extensive non-surgical periodontal treatment within the previous 6 months, periodontal surgery within the previous 2 years or any active or planned periodontal treatment other than routine dental prophylaxis.</p> <p><b>% of selected individuals agreed to participate:</b> 56% (470) of 829 selected participants agreed to come in for further screening. Of those</p>		<p><b>Outcome name:</b> Attachment loss  <b>Outcome definition:</b> Not clear  <b>Outcome measure:</b> Pocket depth and attachment loss were measured with the Florida probe system, an electronic, pressure-sensitive probe. Attachment loss measurements were repeated on all high-risk and Ramfjord Index teeth. If the first and second measures differed 1 mm or more, a third pass was taken and the mean of the closest 2 measures was used as the score.  <b>Outcome measure validated:</b> NR  <b>Unit of measurement:</b> mm  <b>Time points measured:</b> Baseline and 4 month follow-up  <b>Outcome name:</b> Flossing skills  <b>Outcome definition:</b> Flossing criteria</p>	<p>End point (&gt;6mm): 50%  Control group(s)  Baseline (whole mouth): 26%  End point (whole mouth): 21%  Baseline (&lt;3mm): 17%  End point (&lt;3mm): 16%  Baseline (3-6mm): 50%  End point (3-6mm): 36%  Baseline (&gt;6mm): 91%  End point (&gt;6mm): 69%</p> <p>Net change scores (change in intervention group minus change in control group – positive score indicates greater improvement in intervention group or less of a decline):  Whole mouth – 5 percentage points (pp.) p=0.009  &lt; 3mm – 8 pp p=0.009  3-6mm – 5 pp p=0.059  &gt;6mm – 3 pp p=0.437</p> <p><b>Outcome:</b> Pocket depth (mm) – mean scores  Intervention group(s): Baseline (whole mouth): 2.47mm</p>	<p>sessions.</p> <p>In terms of validation, most outcome measures were clinical, objective and based on existing indexes (e.g. plaque scores). The flossing and brushing skills index, which was used by the dental hygiene rater, was assessed using a one week test-retest intra-rater reliability test. However, possibly due to the test-retest sample being highly educated, 86-90% of the scores fell in the highest range of the 3 brushing index components so there was insufficient variation to obtain a stable estimate of intra-class correlation. Patient reported outcomes were also used and do not appear to have been validated.</p> <p>No effect sizes are given from the results</p>

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	<p>interested in participating, 48% (226) were ineligible after further questioning about dental history or availability for classes and the remaining 52% (244) attended a clinical screening visit. Of these 244, 44% (107) met final eligibility requirements (p. 317 para.2).</p> <p><b>Potential sources of bias:</b></p>		<p>included flossing beneath the gumline, wrapping floss "C" style around the interproximal surface, and using at least 2 up and down interproximal strokes.</p> <p><b>Outcome measure:</b> Patients scored 2 for demonstrating the criteria on all teeth observed in the arch, 1 for demonstrating the criteria on at least one-half of the teeth observed in the arch, and 0 for anything else. The total index score possible was 12 points each for brushing and flossing</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Index score.</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p> <p><b>Outcome name:</b> Brushing skills</p> <p><b>Outcome definition:</b> Brushing criteria included brushing the</p>	<p>End point (whole mouth): 2.43mm</p> <p>Baseline (&lt;3mm): 2.02mm</p> <p>End point (&lt;3mm): 2.09mm</p> <p>Baseline (3-6mm): 3.94mm</p> <p>End point (3-6mm): 3.45mm</p> <p>Baseline (&gt;6mm): 6.72mm</p> <p>End point (&gt;6mm): 5.83mm</p> <p>Control group(s)</p> <p>Baseline (whole mouth): 2.62mm</p> <p>End point (whole mouth): 2.63mm</p> <p>Baseline (&lt;3mm): 2.11mm</p> <p>End point (&lt;3mm): 2.24mm</p> <p>Baseline (3-6mm): 3.90mm</p> <p>End point (3-6mm): 3.63mm</p> <p>Baseline (&gt;6mm): 7.15mm</p> <p>End point (&gt;6mm): 6.29mm</p> <p>Standard deviations and confidence intervals not</p>	<p>of the statistical tests and neither standard deviation nor confidence intervals are provided for the mean scores.</p> <p><b>Evidence gaps:</b> Future research should include analysis of volunteer-non-volunteer issues to better determine the generalisability of research results.</p> <p>Although we had a significant effect on plaque, we believe our dichotomous plaque measure was insensitive to relative improvements in plaque levels.</p> <p>Because plaque is a better measure of oral hygiene skill we would suggest instead using a debris index that measures both calculus and plaque as a measure of oral hygiene skill rather than clinical health.</p> <p><b>Source of funding:</b></p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>buccal margin, brushing the lingual gingival margin and using a short-brush stroke technique</p> <p><b>Outcome measure:</b> Patients scored 2 for demonstrating the criteria on all teeth observed in the arch, 1 for demonstrating the criteria on at least one-half of the teeth observed in the arch, and 0 for anything else. The total index score possible was 12 points each for brushing and flossing</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Index score.</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p> <p><b>Outcome name:</b> Self-reported flossing</p> <p><b>Outcome definition:</b> Participants completed a questionnaire during the baseline and follow-up visits to</p>	<p>reported</p> <p>Net change scores (change in intervention group minus change in control group – positive score indicates greater improvement in intervention group or less of a decline):</p> <p>Whole mouth –0.08mm p=0.174</p> <p>&lt;3mm – 0.05mm p=0.324</p> <p>3-6mm – -0.21mm p=0.004</p> <p>&gt;6mm – 0.03mm p=0.927</p> <p><b>Outcome:</b> Attachment loss (mm) – mean scores</p> <p>Intervention group(s): Baseline (whole mouth): 9.73mm End point (whole mouth): 9.79mm Baseline (&lt;3mm): 9.56mm End point (&lt;3mm): 9.58mm Baseline (3-6mm): 9.10mm End point (3-6mm): 10.02mm Baseline (&gt;6mm):</p>	<p>The National Institute of Dental Research, contract no. NOI-DE-12589.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>assess self-reported brushing and flossing frequency.</p> <p><b>Outcome measure:</b> Times per week</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Times per week</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p> <p><b>Outcome name:</b> Self-reported brushing</p> <p><b>Outcome definition:</b> Participants completed a questionnaire during the baseline and follow-up visits to assess self-reported brushing and flossing frequency.</p> <p><b>Outcome measure:</b> Times per week</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Times per week</p> <p><b>Time points measured:</b> Baseline and 4 month follow-up</p>	<p>13.07mm End point (&gt;6mm): 12.59mm</p> <p>Control group(s) Baseline (whole mouth): 9.67mm End point (whole mouth): 9.75mm Baseline (&lt;3mm): 9.61mm End point (&lt;3mm): 9.60mm Baseline (3-6mm): 9.84mm End point (3-6mm): 9.88mm Baseline (&gt;6mm): 11.26mm End point (&gt;6mm): 10.87mm</p> <p>Net change scores (change in intervention group minus change in control group – positive score indicates greater improvement in intervention group or less of a decline): Whole mouth –0.02mm <math>p=0.748</math> &lt; 3mm – -0.03mm <math>p=0.672</math> 3-6mm – 0.02mm</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p><b>Outcome name:</b> Patient satisfaction (with intervention programme)</p> <p><b>Outcome definition:</b> Participant rating of intervention programme – components included: overall programme; group leaders; weekly bleeding checks; oral hygiene instruction; ideas for maintaining good habits; refundable attendance deposit; number of sessions; session meeting time; duration of each session; meeting room.</p> <p><b>Outcome measure:</b> 1 = not helpful at all while 5 = very helpful</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Rating score</p> <p><b>Time points measured:</b> Just one point – at the last class</p> <p><b>Method of analysis</b> (indicate if ITT or</p>	<p>p=0.697 &gt;6mm – -0.01mm p=0.825</p> <p>Standard deviations and confidence intervals not reported</p> <p><b>Behavioural results:</b></p> <p><b>Outcome:</b> Flossing skills (12 point scale) – mean scores</p> <p>Intervention group(s): Baseline: 8.2 End point: 11.1</p> <p>Control group(s): Baseline: 8.6 End point: 9.2</p> <p>ANCOVA based P values for comparing groups at baseline and 4 month follow up:</p> <ul style="list-style-type: none"> <li>• Baseline: p=0.44</li> <li>• Follow-up: p=0.001</li> </ul> <p><b>Outcome:</b> Brushing skills – mean scores</p> <p>Intervention group(s):</p>	

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			<p>completer analysis was used and if adjustments were made for any baseline differences in important confounders): No indication that ITT was used. No adjustments for baseline differences were made but the differences were not found to be statistically significant.</p> <p>Chi-squared was used for the dichotomous outcomes (plaque, gingival bleeding, bleeding on probing). For the continuous outcomes (pocket depth, attachment loss) data was aggregated across sites to produce patient-level means at baseline and follow-up. ANOVA procedures were then used to compare the intervention and control groups on patient-level change</p>	<p>Baseline: 7.5 End point: 10.5</p> <p>Control group(s): Baseline: 6.2 End point: 7.7</p> <p>ANCOVA based P values for comparing groups at baseline and 4 month follow up:</p> <ul style="list-style-type: none"> <li>Baseline: p=0.07</li> <li>Follow-up: p=0.001</li> </ul> <p><b>Outcome:</b> Self-reported flossing – mean scores</p> <p>Intervention group(s): Baseline: 4.9 End point: 6.8</p> <p>Control group(s): Baseline: 3.7 End point: 4.2</p> <p>ANCOVA based P values for comparing groups at baseline and 4 month follow up:</p> <ul style="list-style-type: none"> <li>Baseline: p=0.16</li> <li>Follow-up:</li> </ul>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>scores (i.e. baseline minus follow-up value). The oral hygiene skills of the groups after 4 months were compared using analysis of covariance (ANCOVA) adjusting for baseline skill level.</p>	<p>p=0.001</p> <p><b>Outcome:</b> Brushing skills – mean scores</p> <p>Intervention group(s): Baseline: 12.6 End point: 13.1</p> <p>Control group(s): Baseline: 10.4 End point: 10.4</p> <p>ANCOVA based P values for comparing groups at baseline and 4 month follow up:</p> <ul style="list-style-type: none"> <li>• Baseline: p=0.09</li> <li>• Follow-up: p=0.001</li> </ul> <p><b>Outcome:</b> Patient satisfaction (with intervention programme)</p> <p>Mean score during last class for overall programme: 4.9</p> <p>Other results for this outcome available in Table 3 of article if needed</p> <p><b>Attrition details:</b></p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>4 from intervention and 5 from control group either refused further participation or repeatedly failed to attend numerous scheduled visits</p> <p><b>Conclusion:</b> This randomised trial of a group intervention programme for older periodontal patients showed that the programme was practical, well-received by the target audience and effective in improving oral hygiene habits, skills and clinical oral health outcomes. Compared to controls receiving usual periodontal maintenance care, intervention increased flossing and brushing frequency. Brushing and flossing skills were also significantly better at follow-up for the intervention group.</p> <p>Compared to controls, intervention reduced gingival bleeding by half and bleeding on probing</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>by 22%. Plaque scores also improved significantly. Pocket depth scores (for pockets 3-6mm at baseline only) showed significant improvements, probably through reduction in inflammation. As expected no change in attachment level was noted for the control group over this short period and there was therefore no reason to expect treatment effects for this outcome. These findings indicate that group intervention can help patients maintain improved oral hygiene habits over a 4-month period.</p>	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> C. Loignon, P. Allison, A. Landry<sup>2</sup>, L. Richard, J.-M. Brodeur, and C. Bedos</p> <p><b>Year:</b> 2010</p> <p><b>Citation:</b> Loignon, C., et al., Providing humanistic care: dentists' experiences in deprived areas. <i>Journal of Dental Research</i>, 2010. 89(9): p. 991-995.</p> <p><b>Country of study:</b> Canada</p> <p><b>Quality Score (++, +, or -):</b> +</p>	<p><b>Study design:</b> Conducted qualitative research based on in-depth interviews with eight dentists practising in disadvantaged communities of Montreal, Canada (abstract). Because qualitative research is particularly useful for exploring complex phenomena about which little is known (Bedos et al., 2008), the authors considered it most appropriate for gaining in-depth understanding of dentists' experiences with people living in poverty. (p.991 para.4)</p> <p><b>Research aims, objectives, and questions:</b> Our objective was to identify specific approaches and skills developed by dentists for more effective treatment of people living in poverty and addressing their needs.(abstract)</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> The scientific literature provides data on difficulties encountered by health professionals who treat people living in poverty, but there is a serious lack of evidence on overcoming those difficulties</p>	<p><b>Population the sample was recruited from:</b></p> <p><b>How sample was recruited:</b> Adopted a maximum variation strategy (Patton, 2002) to recruit dentists with various and contrasting levels of professional exposure to poverty. We selected professionals practising in different types of disadvantaged neighbourhoods; we sent them a written invitation then telephoned them to plan an interview. (p.992 para.1).</p> <p>We used a snowball technique (Patton, 2002)—with participants being identified by peers. We thereby obtained a subsample of eight dentists that was homogeneous in terms of skills and clinical approach to people living in poverty, but not necessarily in terms of socio-demographic characteristics. While this group was part of a sample of 33 dentists in the larger study, we present only the subsample results here. We stopped recruiting after the</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>2 experienced researchers conducted the semi-structured individual interviews, which lasted from 90 to 120 min and were audio-recorded for subsequent transcription. (p.992 para.4)</p> <p>The researchers used an interview guide that covered experience with low-income patients, perceptions of poverty, strategies used to resolve problems associated with low-income patients, and possible solutions to improve access to care. Participants were invited to express themselves freely and provide illustrative examples. (p.992 para.5)</p> <p>To improve the rigor and credibility of our results, three researchers were heavily involved in the analysis, which included interview debriefing, transcript coding, and data display and interpretation. In debriefings immediately following each interview, researchers reflected on the data collection, summarised findings, identified emerging hypotheses, and prepared subsequent interviews. Two researchers coded the transcripts independently and compared their</p>	<p><b>Limitations identified by author:</b></p> <p>Before interpreting our results, we should point out some potential methodological limitations. First, our study reflects the experiences of a relatively small number of dentists; nevertheless, we consider the sample size to be appropriate, considering our methodology. Indeed, we attained data saturation and achieved a depth and complexity of data that could hardly have been obtained through quantitative research (Guest et al., 2006). Second, we advise caution about the generalisability of our results. Our sample was composed of dentists who practise in a particular social context and under a healthcare system—that of Quebec—whose organisation differs in several fundamental aspects from those of the US or European countries. (p.994 para.6)</p> <p><b>Limitations identified by review team:</b></p>

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	<p>(Stewart et al., 2005; Mercer et al., 2007; Monnickendam et al., 2007). Our study may be the first to describe how some dentists develop a socio-humanistic approach that includes understanding patients' social context, taking time and showing empathy, avoiding moralistic attitudes, overcoming social distances, and favoring direct contact.(p.994 para.4)</p> <p><b>State how data were collected:</b>  <b>What method(s):</b> Semi-structured interviews  <b>By whom:</b> Researchers  <b>What setting:</b> Montreal, Canada (p.992 para.1)  <b>When:</b> 2004 to 2008 (p.992 para.1)</p>	<p>eighth interview because we reached saturation after the sixth; the seventh and eighth brought no new information. (p.992 paras 2-3)</p> <p><b>How many participants recruited:</b></p> <p><b>Sample characteristics (o.992 Table1):</b></p> <p><b>Age:</b> 31-40=1; 41-50=3; 51-60=1; 61-70=3</p> <p><b>Sex:</b> Female=2; Male=6</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> Canadian=4; Canadian (non-Western background)=4</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Neighbourhood of practice: Multi-ethnic=3; Caucasian French speaking=5 Poverty rates between 38% and 53% significantly above city's overall rate of 29% (p.992 para.7)</p> <p><b>Occupation:</b> Dentists</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> 2 inclusion criteria, which were that participants had to: (1)</p>	<p>work. As recommended by Miles (Miles and Huberman, 1994), data were then displayed in analytic matrices covering 3 main themes of interest: dentists' experiences with low-income patients, perception of poverty, and strategies to overcome difficulties with this clientele. To ensure that interpretations were grounded in data and not influenced by researchers' pre-existing views, the interpretive process used triangulation, as the 3 researchers checked and validated their interpretations. (p.992 para.6)</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>NOTE: Several interesting themes – but I have only reported on those which are relevant to oral health messages:</p> <p>Taking Time and Showing Empathy All participants demonstrated empathy regarding their patients' living conditions by taking time to talk with them, showing their concern, and not judging their low oral-health literacy. One spoke of his empathy for a young patient exposed to violence in the family who was consequently removed from her family by a government agency. (p.993 para.4)</p>	<p>The research question is rather broad - a lot of things besides oral health messages would fit into "more effective treatment". The findings are only partially relevant to our study – and only a couple of the key themes have been reported here as a result.</p> <p>There is some information on researcher role (covered analysis as well as interviews). Also researcher did invite participants to express themselves freely - but it's not clear how research was explained to participants.</p> <p>Only one data collection method was used which limits reliability of the methodology.</p> <p>Themes are discussed generally - but not linked to dentists in particular areas or groups - however there are only 8 respondents</p> <p>More links could have been made with the data in the conclusion. The researchers did consider that the findings</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
		<p>serve a clientele largely composed of people living in poverty, and (2) demonstrate an openness to treating them. (p.992 para.2)</p> <p><b>Exclusion criteria:</b> NR</p>	<p>Avoiding Moralistic Attitudes and Accepting Compromises</p> <p>Recognizing that people living in poverty find it challenging to follow treatment plans and practise good oral hygiene, participants adopted the strategy of remaining steadfast and avoiding moralistic attitudes. They considered that blaming patients was ineffective because it impeded the therapeutic alliance. (p.993 para.6)</p> <p>While recognizing that even more advantaged patients did not necessarily practice good oral hygiene, participants considered this a major issue in disadvantaged areas. Their approach was pragmatic and realistic: They tried to motivate their patients and negotiate the best treatment option, but accepted compromises to find common ground (Table 3). (p.993 para.7)</p> <p><b>Conclusions:</b> In conclusion, our research shows that, for better treatment of people living in poverty, some dentists develop, over years of practice, an original approach mainly based on empathy and communication. Even though dentists using this socio-humanistic approach found it successful, further research should be conducted to assess its impact on access to dental services and patients' experience of care. (p.995 para.5)</p>	<p>might reflect the dentists' pragmatism rather than just their humanistic values.</p> <p><b>Evidence gaps and/or recommendations for future research:</b></p> <p>Even though dentists using this socio-humanistic approach found it successful, further research should be conducted to assess its impact on access to dental services and patients' experience of care. (p.995 para.5)</p> <p><b>Source of funding:</b> This study was funded by the Canadian Institutes of Health Research and the Fonds de la recherche en santé du Québec. The first author was supported by a post-doctoral fellowship from the GREAS 1 (Public Health Agency of Montreal) and by the Strategic Training Program in Applied Oral Health Research (CIHR-McGill University). (p.995 para.6)</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> Meurman, P. et al <b>Year:</b> 2009 <b>Citation:</b> Meurman, P., et al., Oral health programme for preschool children: a prospective, controlled study. International Journal of Paediatric Dentistry, 2009. 19(4): p. 263-73. <b>Country of study:</b> Finland <b>Aim of Study:</b> The aim of this study was to evaluate the preventive effect of a risk-based Oral Health Promotion (OHP) versus traditional programme on the occurrence of dental caries at	<b>Source Population(s):</b> Finland. The health authorities in Turku Health Centre pointed out 2 suburban areas for this study. They estimated the socio-economic profiles and sizes to be comparable and suitable for a prevention programme. The entire cohort of 1275 children, born between 1 January 1998 and 30 June 1999, and living in either of the study areas, was enrolled in the study and screened for mutans streptococci (MS) and were enrolled into the study if they were MS positive. <b>Setting:</b> The study was carried out in 2 of 4 public health	<b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> The areas were not randomly assigned to study groups. For practical reasons, the more populated area, with two employed hygienists was selected for the intervention. Only one hygienist was stationed in the other area which then formed the control group.  <b>Report how confounding factors were minimised:</b> At baseline, there were differences between the groups, in relation to the occupation of caretakers, child's gender, and MS colonisation. Therefore, these confounding factors had to be controlled in the statistical analyses. This increased the validity of the study and improved the possibilities to interpret the outcomes.  <b>Programme/Intervention description:</b>	<b>Outcomes:</b> <b>Outcome name:</b> Dental caries <b>Outcome definition:</b> Proportion of children with dental caries and prevalence of dental caries >0 at 5 years <b>Outcome measure:</b> screening <b>Outcome measure validated:</b> NR <b>Unit of measurement:</b> Dmft % <b>Time points measured:</b> Exam at 3 years and 5 years  <b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b> The baseline demographic differences and differences in the	<b>Oral health (clinical) results:</b>  The proportion of children with dental caries: dmft >0 at 5 years %  <b>MS+ white collar</b> <b>Intervention:</b> 13.8% <b>Control:</b> 43.2%  <b>MS+ blue collar</b> <b>Intervention:</b> 41.7% <b>Control:</b> 37.3%  (The absolute risk reduction (ARR) and the number needed to treat (NNT) values as a measure of the preventive effect of the oral health programme targeted to MS-colonised children in the intervention group. White collar families: ARR 0.29, 95% CI 0.1–0.5, NNT 3, 95%	<b>Limitations identified by author:</b> NR  <b>Limitations identified by review team:</b> Study took place in Finland – not reflective of a UK dental practice setting.  Study was not randomised due to practical reasons and dentists were not blinded to study groups.  <b>Evidence gaps:</b> NR  <b>Source of funding:</b> The research fund of the Finnish Dental Organisations and Sumen Naishammaslaakarit r.y.-Finnish Women Dentists' Association.

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>preschool age. The OHP for the MS-colonised children was based on repeated motivation and oral health education, and included the use of xylitol lozenges.</p> <p><b>Study Design:</b> Non-RCT (CCT). An age cohort of 794 Finnish children, 446 in the intervention group and 348 in the control group, was followed from 18 months to 5 years of age. The children were screened for mutans streptococci (MS) in the dental biofilm.</p> <p><b>Quality Score (++, +, or -): -</b></p>	<p>care areas of Turku, Finland.</p> <p><b>Location (urban or rural):</b> suburban</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 18<sup>th</sup> months to 5 years  <b>Sex:</b> NR  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b>  <b>Occupation:</b> The occupation of the primary caretaker in the family was categorised according to the Finnish official statistical classification, and further dichotomised in white collar and blue collar occupations  <b>Education:</b> Turku, Finland  <b>Socioeconomic position:</b> White</p>	<p><b>What was delivered:</b>  All families (in both groups) received OHP:</p> <ul style="list-style-type: none"> <li>- Oral health aspects were emphasised by the public paediatric health nurse and by the dental personnel at the ages of 6-8 months. And later at 18 months. At these OHP visits, the main topics were dental health, oral bacteria and transmission pathways, planned regular meals, avoiding sugar, choosing healthy non-cariogenic food drink and snacks, oral hygiene, adequate use of fluorides, the development of teeth, and sucking habits.</li> <li>- Caretakers received a toothbrush for the child</li> <li>- During the 18 month visit a biofilm sample was taken.</li> <li>- The test result and confirmation of earlier explained health aspects were given upon a call.</li> <li>- At the age of 3 a dentist invited the child to a dental clinic for examination</li> <li>- Thereafter the invitations were sent individually approx. every 18 months or more frequently if the risk for caries was considered high.</li> </ul>	<p>distribution of colonized subjects in the study groups were analysed using the chi squared test, statistical significance level being <math>P &lt; 0.05</math></p>	<p>CI 2–11; blue-collar families: ARR –0.04, 95% CI –0.23–0.14.)</p> <p>Prevalence of dental caries (<math>dmft &gt; 0</math> at 5 years) and means of the <math>dmft</math> by occupation: total and by MS colonisation (+ or -) and gender % and mean (SEM):</p> <p><b>White collar total:</b>  <b>Intervention:</b> 11.4% and 0.31 (0.09)  <b>Control:</b> 14.7% and 0.54 (0.12)</p> <p><b>White collar girls+</b>  <b>Intervention:</b> 18.2% and 1.27 (0.85)  <b>Control:</b> 44.4% and 2.17 (0.77)</p> <p><b>White collar girls-</b>  <b>Intervention:</b> 8.8% and 0.16 (0.08)  <b>Control:</b> 9.1% and 0.17 (0.07)</p> <p><b>White collar boys+</b>  <b>Intervention:</b> 11.1% and 0.22 (0.17)  <b>Control:</b> 42.1% and</p>	

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<b>External Validity</b> (++, +, or -): +  <b>Social capital:</b> NR	<b>Eligible population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> 2 suburban study areas - The entire cohort of 1275 children, born between 1 January 1998 and 30 June 1999, and living in the 2 study areas identified by the Turku Health Centre, were screened for MS.  <b>State if eligible population is considered by the study authors as representative of the source population:</b> Entire cohort were selected and screened.	collar / blue collar occupations <b>Social capital: NR</b> Additional intervention for families in intervention group (intervention OHP was delivered to MS positive subjects in the intervention group p.266, Table 2): <ul style="list-style-type: none"> <li>- Health nurses mentioned habitual use of xylitol products could be continued also during pregnancy and after birth.</li> <li>- After positive result of screening test, the first invitation to hygienist's office was sent to the child with its caretakers.</li> <li>- Results of screening test discussed during visit</li> <li>- Healthy oral habits and dietary aspects were stressed</li> <li>- Caretakers were motivated to ensure adequate use of fluorides and good oral hygiene of the child</li> <li>- Toothbrushing demonstrated if necessary</li> <li>- Free xylitol/maltitol lozenges offered (available until third birthday) – recommended 2 lozenges 3 times daily</li> <li>- Instructions given orally and in writing</li> <li>- For MS-positive subjects, the second invitation to the hygienist's office was due after 3 months and thereafter</li> </ul>		1.79 (0.67)  <b>White collar boys-</b> <b>Intervention:</b> 12.9% and 0.33 (0.13) <b>Control:</b> 6.1% and 0.24 (0.13)  <b>Blue collar total:</b> <b>Intervention:</b> 25.4% and 1.00 (0.13) <b>Control:</b> 27.4% and 0.54 (0.12)  <b>Blue collar girls+</b> <b>Intervention:</b> 31.8% and 2.14 (0.10) <b>Control:</b> 34.5% and 1.14 (0.37)  <b>Blue collar girls-</b> <b>Intervention:</b> 15.7% and 0.40 (0.80) <b>Control:</b> 19.2% and 0.73 (0.27)  <b>Blue collar boys+</b> <b>Intervention:</b> 47.4% and 2.24 (0.50) <b>Control:</b> 40.9% and 1.09 (0.34)  <b>Blue collar boys-</b> <b>Intervention:</b> 26.2% and 0.93 (0.20)	

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	<p><b>Inclusion Criteria:</b> The inclusion criteria were: Finnish background, information of gender, performed screening test at 18 months, and a clinical examination at the age of 5 years <math>\pm</math> 6 months. A total of 794 children met with the inclusion criteria, 446 in the intervention group and 348 in the control group.</p> <p><b>Exclusion Criteria:</b> 89 subjects excluded due to ethnicity (before enrolment) – unclear on reasons</p> <p><b>% of selected individuals agreed to participate:</b> 1186 enrolled, 58 were not screened = 1128. 95%. (not all completed the study – 794 completed)</p> <p><b>Potential sources of bias:</b></p>	<p><b>every 6 months until the age of 5 years</b></p> <ul style="list-style-type: none"> <li>- At the following visits, the caretakers received repeated information on healthy habits, brushing fluorides, meals, snacks and drinks</li> </ul> <p>The hygienist were encouraged to create a supportive relaxed atmosphere</p> <p><b>Theoretical basis: NR</b></p> <p><b>By whom:</b> 54 dentists carried out all exams; 2 specially trained dental hygienists carried out screening, clinic visits and the OHP.</p> <p><b>To whom:</b> Caretakers of children received OHP (and children-exams)</p> <p><b>How delivered:</b> OHP given orally and in writing during the visits</p> <p><b>When/where:</b> Study took place from June 1999 to December 2004. Health Centres Turku</p> <p><b>How often:</b> 18 months screening, second invitation to the hygienists office due after 3 months and thereafter every 6 months until the age of 5 years.</p> <p><b>How long for:</b> Age 18 months to 5 years of age (3.5 years)</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> All families</p>		<p><b>Control:</b> 25.9% and 0.74 (0.21)</p> <p>A significantly lower caries prevalence was found only in the White collar background children in the intervention group (ARR 0.29, 95% CI 0.1–0.5, NNT 3, 95% CI 2–11): in girls, the prevalence of caries (<math>dmft &gt; 0</math>) was 18% in the intervention group, and 44% in the control group. The corresponding figures were 11% and 42% in boys (Table 4 p.268). In blue collar background children, no differences between the groups were found. The same phenomena were seen in the mean <math>dmft</math> values (Table 4).</p> <p>Prevalence of carious lesions (<math>idmft &gt; 0</math> at 5 years) %:</p> <p><b>White collar total Intervention group:</b></p>	

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		<p>(in both groups) received OHP:</p> <ul style="list-style-type: none"> <li>- Oral health aspects were emphasised by the public paediatric health nurse and by the dental personnel at the ages of 6-8 months. And later at 18 months. At these OHP visits, the main topics were dental health, oral bacteria and transmission pathways, planned regular meals, avoiding sugar, choosing healthy non-cariogenic food drink and snacks, oral hygiene, adequate use of fluorides, the development of teeth, and sucking habits.</li> <li>- Caretakers received a toothbrush for the child</li> <li>- During the 18 month visit a biofilm sample was taken.</li> <li>- The test result and confirmation of earlier explained health aspects were given upon a call.</li> <li>- At the age of 3 a dentist invited the child to a dental clinic for examination</li> <li>- Thereafter the invitations were sent individually approx. every 18 months or more frequently if the risk for caries was considered high.</li> </ul> <p><b>By whom:</b> 54 dentists carried out all exams</p>		<p>29.3%  <b>Control group:</b>  29.8%</p> <p><b>White collar girls+</b>  <b>Intervention:</b> 36.4 %  <b>Control:</b> 61.1%</p> <p><b>White collar girls-</b>  <b>Intervention:</b> 20.6%  <b>Control:</b> 23.9%</p> <p><b>White collar boys+</b>  <b>Intervention:</b> 44.4%  <b>Control:</b> 57.9 %</p> <p><b>White collar boys-</b>  <b>Intervention:</b> 32.9%  <b>Control:</b> 21.2%</p> <p><b>Blue collar total</b>  <b>Intervention group:</b>  40.9%  <b>Control group:</b>  43.3%</p> <p><b>Blue collar girls+</b>  <b>Intervention:</b> 59.1%  <b>Control:</b> 44.8%</p> <p><b>Blue collar girls-</b>  <b>Intervention:</b> 26.9%  <b>Control:</b> 36.5%</p> <p><b>Blue collar boys+</b>  <b>Intervention:</b> 63.2%</p>	

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		<p><b>To whom:</b> Caretakers of children received OHP (and children-exams)</p> <p><b>How delivered:</b> OHP given orally and in writing</p> <p><b>When/where:</b> Study took place from June 1999 to December 2004. Health Centres Turku</p> <p><b>How often:</b> 18 months screening for MS +/-, clinical exam thereafter at 3 years and 5 years.</p> <p><b>How long for:</b> 3.5 years</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 1128</b>  <b>Intervention group N = 617</b>  <b>Control Group N = 511</b></p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b> Between the study groups a significant difference was found in the proportion of blue collar families and the proportion of MS-colonised children. Confounding factors were controlled in the statistical analysis</p> <p><b>Study sufficiently powered (power calculations and provide details):</b></p> <p>On the grounds of the results of a short pilot study, around 25–30%</p>		<p><b>Control:</b> 59.1%</p> <p><b>Blue collar boys- Intervention:</b> 43.2%  <b>Control:</b> 42.6%</p> <p>In the intervention group, 52% of the MS positive white collar children, and 50% of the blue collar children regularly used the specially manufactured xylitol lozenges, whereas the other half either used the lozenges irregularly or had stopped using. 3 mothers reported laxative effects as adverse effects and as the reason for discontinued use of lozenges, and one mother reported preferring to give only half a dose of lozenges. In the intervention group, among the MS-positive children, no significant differences between regular users versus irregular users of the xylitol lozenges</p>	

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		of children were estimated to be MS colonised in early childhood. Of the MS-colonised Finnish children, 37% were estimated to develop dental caries up to the age of 5 years. To obtain an absolute risk reduction (ARR) of 10%, which was considered clinically significant, around 1000 children should be enrolled in the study.		<p>were found in relation to caries (p.269).</p> <p><b>Attrition details</b>  <b>Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control):</b></p> <p>Altogether, 1128 of the 1186 Finnish children were screened for MS. Of the 58 unscreened, 20 children were sick or treated by antibiotics at the time, 36 either had moved from the area, or for other reasons did not visit the hygienist. During the follow-up period, if the family moved to another area within the city, the children were examined by the dentist in the respective area and they remained as study participants. Altogether, 334</p>	

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				<p>children dropped out because the family had either moved out of the city (256 cases) or they were excluded if the 5-year dental examination did not come about within the time limit. Reasons mentioned for absence/delay (51 cases) were temporary visit abroad, logistic problems, illnesses, family causes such as a newborn baby at home, unsuitable working hours, ongoing dental treatment, and sickness leave of the dentist. The reason for absence remained unnoticed in 27 patient records. Of the drop-outs, the demographic factors, gender, carious lesions at baseline, and proportion of risk subjects were analysed based on available information. No significant differences between</p>	

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				<p>the drop-outs and the analysed were found in either study group.</p> <p><b>Conclusion:</b> In the present population, with relatively low caries prevalence, the MS colonisation in the dental plaque (biofilm) and the occupation of caretaker are strongly related to dental caries at the age of 5 years. The present programme seems to have a better preventive effect on dental caries in white collar families than in blue-collar families. For blue collar families, different kinds of methods for oral health promotion and support are additionally needed.</p>	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> I. Mills, J. Frost, E. J. Kay and D. R. Moles</p> <p><b>Year:</b></p> <p><b>Citation:</b> Mills, I., Frost, J., Kay, E. J., and Moles, D. R. (in press) Measuring patient experience – A model of person-centred care in dentistry.</p> <p><b>Country of study:</b> UK</p> <p><b>Quality Score (++, +, or -)</b> ++</p>	<p><b>Study design:</b> The study consisted of in-depth qualitative interviews (p.5, para. 3).</p> <p><b>Research aims, objectives, and questions:</b> This study aims to provide an understanding on the term Person-Centred Care (PCC) from a patients' perspective and introduce a model, which may be considered relevant in subsequent refinements of the Dental Quality and Outcomes Framework (DQOF) (p.5, para. 2).</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> Thematic analysis (p.7, para. 1).</p> <p><b>State how data were collected:</b> <b>What method(s):</b> 15 in-depth semi-structured interviews were collected. A topic guide was used during the interview, which were tested during 4 pilot interviews. The 15 interviews took place at locations which were convenient for the participants and lasted between thirty and eighty minutes. The interviews</p>	<p><b>Population the sample was recruited from:</b> Southwest England. (p.5, para.4)</p> <p><b>How sample was recruited:</b> Recruitment was achieved through advertising and promotion of the study with GP practices, Peninsula Dental school facilities and by word of mouth. (p.5, para. 4 and p.6, para.1). Recruitment of participants continued until no new themes were identified by the research team (p.7, para.1).</p> <p><b>How many participants recruited:</b> 15 participants. (p. 6, para. 2).</p> <p><b>Sample characteristics:</b> <b>Age:</b> The age range was between 21 and 76 years of age (p.6, para.2). <b>Sex:</b> NR <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> Southwest England (p.5, para.4). <b>Occupation:</b> NR</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>The data were analysed using a thematic approach (p.7, para.1). This was inductive and followed the process of familiarisation, coding, display, organisation and identification of themes. NVivo software was used to organise the data and support generation of codes, prior to aggregation and development of broad themes. (p.7, para.1).</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>A number of themes were identified through the interviews and were categorised as functional or relational aspects of care (p.7, para.3).</p> <p>Functional aspects referred to the healthcare system and the physical environment, which appeared to have an indirect influence on PCC. The following findings were therefore based on the relational aspects that were identified (p.7, para.3).</p> <p>In terms of relational aspects of care, five components of PCC were identified these were: connection, attitude,</p>	<p><b>Limitations identified by author:</b></p> <p>Our study reports the experiences and views of a relatively small number of patients who were all based in the Southwest of England (p.13, para.2).</p> <p><b>Limitations identified by review team:</b></p> <p>The paper does not clearly describe how the research was explained to the participants.</p> <p>A breakdown was not provided for the number of participants who were male or female.</p> <p>Only one method was used for data collection.</p> <p>Not many examples from the interviews were provided within the paper.</p> <p>No comparison was made (or stated that there was no difference) between gender or age group.</p> <p>Only one limitation was</p>

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	<p>were audio-digitally recorded and professionally transcribed verbatim.(p.6, para.2 and 3).</p> <p><b>By whom:</b> The lead author (p.6, para.2).</p> <p><b>What setting:</b> Locations which were suitable for the participants. (p.6, para.3).</p> <p><b>When:</b> The interviews were collected during February and August 2014. (p.6, para.2).</p>	<p><b>Education:</b> NR  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p>communication, empowerment and feeling valued. (p.7, para.4). Theoretically they may appear as distinct entities but in practical terms they are closely related and interdependent (p.8, para.1).</p> <p><b>Connection</b>  Connection was felt to underpin the professional relationship and the continuity of care played an important role in facilitating this. Patients expressed a strong preference for having access to a regular dentist as they greatly value familiarity, consistency and continuity of care. They consider their dental provider as "my dentist" and have established a strong working relationship. For some this is based on a long term relationship and familiarity but for others it is based on a 'good fit' with engagement, rapport and shared values/beliefs viewed as important criteria. Some described the difficulties and frustrations with a constantly changing dentist <i>"if I look at recent experiences one of the problems is that even though we're probably there every nine to 6 months at the moment I would say that you see a different (dentist), the turnover is very very high, we're probably turning over dentists every 12, 18 months".</i> (p.8, para.2)</p> <p><b>Attitude</b>  A caring, understanding and empathetic approach is greatly valued, with patients</p>	<p>discussed.</p> <p><b>Evidence gaps and/or recommendations for future research:</b> NR</p> <p><b>Source of funding:</b> NR</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>appreciative of a relaxed, calm manner and a gentle considerate approach. An uncaring or ambivalent approach was highly criticised, particularly where physical discomfort was experienced during treatment. Dental anxiety was attributed to previous experience of pain which had not been acknowledged or dealt with. Patients expected to be treated professionally with respect and dignity in a non-judgemental manner. Small gestures of support were greatly appreciated and appeared to demonstrate that staff genuinely care “<i>I didn't feel warmth from the person, I feel like I was a bit irritating, so what I wanted was somebody who understands you're a nervous patient, will have some patience with you...will kind of go, ok, I need someone who's quite super-calm, kind of a warmth in their voice</i>” (p.8, pa3 and p.9, para.1).</p> <p><b>Communication</b></p> <p>Patients highlighted concerns around communication when they are not provided with adequate information. This lack of communication was identified as being due to a number of reasons including lack of information, poor communication skills, attitude, failure to listen, use of technical language, poor English language skills or lack of time available. (p.9, para.1).</p> <p>Patients wanted the opportunity and time to be listened to, and also a</p>	

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			<p>demonstration that their “voice” had been heard. <i>“Well it isn’t just listened to, it’s demonstrated that, there needs to be a demonstration that you’ve been listened to doesn’t there”</i>. (p.9, para.1).</p> <p>Patients generally wanted a level of information which would allow them to make informed decisions about their own care; it was seen as inadequate if this was not achieved. (p.9, para.2).</p> <p>Communication difficulty with non-UK dentists was mentioned repeatedly and was often associated with unfamiliarity due to a lack of continuity care.(p.9, para.2).</p> <p>Effective communication between professionals was considered important to ensure coordinated care. (p.9, para.3).</p> <p><b>Empowerment</b></p> <p>Patients expressed feelings of vulnerability when visiting the dentist and this often stemmed from a previous bad experience when they felt a loss of control. Acknowledgement, reassurance and support from the dental team were considered very important in addressing this <i>“Just smiling and being comforting and not making me feel like I didn’t have to do anything I didn’t want to do. Letting me be in control of it slightly”</i>. (p.10, para.2).</p>	

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			<p>Patients appreciated the opportunity to discuss options and have an influence on decisions about their care. Participants estimated that they were happy to be less involved in shared decision making with simple of emergency procedures but wanted more detailed information for more complex or elective treatments. (p.10, para.3).</p> <p><b>Value</b> Feeling valued and appreciated was at the centre of most patients' views on visiting the dentist. This was in terms of time, respect and being treated as an individual (p.10, para.4).</p> <p><b>Conclusions:</b> Effective evaluation of patient experience is a fundamental aspect of improving quality in NHS dentistry. The current approaches to evaluation within dentistry do not appear to measure patient experience adequately. (p.13, para.3).</p> <p>This paper proposes a model of PCC for dentistry to illustrate the themes which were identified; these were the relational aspects of care. The findings reinforce the importance which patients place on relational aspects of care and how they predominantly use this to assess the quality of care provided. The model also includes functional aspects of care; these were considered to also have an impact on the delivery of PCC.</p>	

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			<p>(p.12, para.2 and 3).</p> <p>This study provides a unique insight into patients understanding of person-centred care by using first order constructs through personal experiences. The model proposed has been generated from empirical evidence using sound qualitative methods with the hope that this may inform and influence development of a tool to measure PCC within any future version of the DQOF. (p.13, para.3).</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Munster Halvari, A. E. et al</p> <p><b>Year:</b> 2012</p> <p><b>Citation:</b> Münster Halvari, A.E., et al., Self-determined motivational predictors of increases in dental behaviours, decreases in dental plaque, and improvement in oral health: A randomised clinical trial. <i>Health Psychology</i>, 2012. 31(6): p.777-788.</p> <p><b>Country of study:</b> Norway</p> <p><b>Aim of Study:</b> The present study tested the hypotheses that: (a) a dental intervention designed to promote dental care competence in an autonomy-supportive way,</p>	<p><b>Source Population(s):</b> Norway. 207 potential participants from the University of Oslo indicated interest in the study on motivation and dental behaviour after seeing a poster or being approached by the researcher.</p> <p><b>Setting:</b> In a dental clinic – not clear where, participants were from the University of Oslo.</p> <p><b>Location (urban or rural):</b> Oslo</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 18-32 years  <b>Sex:</b> 71% female  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> students at the</p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> NR. No information given on how participants were randomised</p> <p><b>Report how confounding factors were minimised:</b> There were no significant differences between completers from the two groups with the exception of gender which was controlled for when the MANOVA was run. Gender was found not to be significant as a main effect or interaction.</p> <p><b>Programme/Intervention description:</b>  <b>What was delivered:</b> Initial exam: plaque and gingivitis. Psychological questionnaire: covering autonomy orientation, perceived competence, autonomous motivation for home care, dental behaviours, demographics</p> <p>45 minute intervention: Dental hygienist began intervention by asking participants about their perceived oral health and</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Perceived autonomy support (T1c)</p> <p><b>Outcome definition:</b> Perceived autonomy support was measured with the 6-item version of the Health Care Climate Questionnaire (Williams et al., 1996). A sample item is, "I feel that my dental professional has provided me choices and options in relation to my daily oral home care."</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Yes - The scales for measuring motivation variables were found reliable in previous research: autonomy support (<math>\alpha=.96</math>, Williams et al.,</p>	<p><b>Oral health (clinical) results:</b></p> <p><i>Plaque (T1a and T2)</i>  <i>Mean (SD), <math>\alpha</math>:</i></p> <p><b>Total sample:</b> NR  <b>Baseline:</b> NR  <b>Follow up (all time points):</b> N/A  <b>End point:</b> NR</p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> 1.31 (0.29), 0.93  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 0.51 (0.19), 0.95</p> <p><b>ANOVA Results:</b>  <math>F=24.31</math> Cohen's <math>d=0.86</math> 95% CI= -0.81 to -0.91 <math>p&lt;0.001</math></p> <p><b>Control group(s)</b>  <b>Baseline:</b> 1.27 (0.26), 0.93</p> <p><b>Follow up (all time points):</b> N/A  <b>End point:</b> 0.90 (0.27), 0.95</p> <p><i>Gingivitis (T1a and T2)</i></p>	<p><b>Limitations identified by author:</b></p> <p>Sample size too small: Due to small sample size, the SDT model was simplified: could not include change in gingivitis in the structural model tested, but we used bootstrapping separately to test the indirect link between changes in behaviour and gingivitis through change in dental plaque</p> <p>Changes in motivation, behaviour, plaque, and gingivitis were assessed at the same time, so we cannot conclude that the motivation variables produced the changes in dental behaviour, plaque, and gingivitis.</p> <p><b>Limitations identified by review team:</b></p>

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<p>relative to standard care, would positively predict perceived clinician autonomy support and patient autonomous motivation for the project, increases in autonomous motivation for dental home care, perceived dental competence, and dental behaviours, and decreases in both dental plaque and gingivitis over 5.5 months; and (b) the self-determination theory process model with the intervention and individual differences in autonomy orientation positively predicting project autonomous motivation and increases in perceived dental competence, both of which would be associated with</p>	<p><b>University of Oslo</b>  <b>Occupation:</b> Students  <b>Education:</b> University students  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> students from the University of Oslo indicated interest in the study on motivation and dental behaviour after seeing a poster or being approached by the researcher.</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR. No demographic information is</p>	<p>problems and listening to and acknowledging their feelings and perspectives before giving competence-related information about their perceived oral health and problems. Based on this conversation the contents of the intervention were:</p> <ul style="list-style-type: none"> <li>• Education in plaque-related diseases such as gingivitis, periodontitis and caries</li> <li>• Demonstrating effective brushing and flossing with participants practising these tasks</li> <li>• Giving health promotion and disease preventive information and offering rationales for dental behaviours by explaining the relations of behaviours to disease prevention and health</li> <li>• Giving information about the value of fluorides and regular meals</li> <li>• Offering choice and options concerning dental home care.</li> </ul> <p>Followed by teeth cleaning done in an autonomy-supportive way.</p> <p>All participants responded to questionnaires assessing</p>	<p>1996)</p> <p><b>Unit of measurement:</b> Scale: 1 (strongly disagree) to 7 (strongly agree)</p> <p><b>Time points measured:</b> Immediately after intervention and/or cleaning</p> <p><b>Outcome name:</b> Autonomous motivation for the Dental Project (T1c)</p> <p><b>Outcome definition:</b> This aspect of the study was assessed by the Evaluation of Dental Project Scale (Halvari and Halvari, 2006). 4 items focussed on participants' interest, engagement, and curiosity toward the project. A sample item is, "In this project I have become more interested in my dental health."</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Yes - The</p>	<p><i>Mean (SD), <math>\alpha</math>:</i></p> <p><b>Total sample:</b>  <b>Baseline:</b> NR  <b>Follow up (all time points):</b> N/A  <b>End point:</b> NR</p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> 1.47 (0.15), 0.88  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 1.17 (0.10), 0.94</p> <p><b>ANOVA results:</b>  <math>F=52.27</math> Cohen's <math>d=1.21</math> 95% <math>Ci= -1.18</math> to <math>-1.24</math> <math>p&lt;0.001</math></p> <p><b>Control group(s)</b>  <b>Baseline:</b> 1.44 (0.15), 0.88  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 1.17 (0.10), 0.94</p> <p><b>Behavioural results:</b>  <i>Perceived autonomy support (T1c)</i>  <i>Mean (SD), <math>\alpha</math>:</i></p>	<p>Very little information on the source population. Other than, the participants were all students from the University of Oslo. No demographic information is provided on the source population to compare with those who are eligible and there is no information on how participants were initially recruited. Inclusion and exclusion criteria unclear.</p> <p>No information on how randomisation was undertaken.</p> <p><b>Evidence gaps:</b>  A result of the ANCOVA indicated that control group participants showed a decrease in plaque but an increase in gingivitis. It is possible that the plaque</p>

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<p>increases in dental behaviour, which would, in turn, lead to decreased plaque and gingivitis.</p> <p><b>Study Design:</b> Parallel RCT</p> <p><b>Quality Score (++, +, or -):</b> ++</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>provided on the source population to compare with those who are eligible and there is no information on how participants were initially recruited.</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> Not specifically reported. However, of the 207 students, 158 (a) showed up at the clinic, (b) did not have periodontal pockets <math>&gt;4.0</math> mm, as measured by a pocket probe, and/or serious bone loss visualised by digital X rays during the dental examination, (c) did not have significant additional oral or other diseases, (d) were not pregnant, (e) understood Norwegian, and (f) gave informed consent.</p>	<p>perceived clinic autonomy support and autonomous motivation for the dental project.</p> <p>Follow-up after 5.5 months: questionnaire covering perceived competence, autonomous motivation for home care, dental behaviours. Dental clinic exam: plaque, gingivitis. (Followed by teeth cleaning and debriefing).</p> <p><b>Theoretical basis:</b> Self-determination theory process model (SDT)</p> <p><b>By whom:</b> Dental hygienist</p> <p><b>To whom:</b> Participants (university students)</p> <p><b>How delivered:</b> Use of SDT: Listening to and acknowledging feelings, providing education, offering choices, demonstrating techniques.</p> <p>Teeth cleaning was done in an autonomy-supportive way.</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Just one episode of the intervention. Cleaning and questionnaire twice - (pre and post intervention)</p> <p><b>How long for:</b> Intervention study took place over 5.5 months</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b></p>	<p>scales for measuring motivation variables were found reliable in previous research: autonomous motivation toward the dental project (<math>\alpha = .85</math>, Halvari and Halvari, 2006)</p> <p><b>Unit of measurement:</b> scale: 1 (not at all true) to 7 (very true)</p> <p><b>Time points measured:</b> Immediately after intervention and/or cleaning</p> <p><b>Outcome name:</b> Autonomous motivation for dental home care (T1a and T2)</p> <p><b>Outcome definition:</b> A 3-item identified subscale of the Self-Regulation for Dental Home Care Questionnaire (Halvari et al., in press[a]) measured autonomous motivation. A sample item is, "I do my dental home care because I think it is the best for me, and it is in my</p>	<p><b>Total sample:</b> NR</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> NR</p> <p><b>Intervention group(s):</b> n=79</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> Immediately after intervention and/or cleaning: 6.61 (0.48), 0.96</p> <p><b>NR</b></p> <p><b>End point:</b> NR</p> <p><b>Univariate ANOVA result – intervention</b>  <math>F = 148.98</math>, Cohen's <math>d = 1.38</math>, 95% CI: 1.14-1.62, <math>p &lt; 0.001</math></p> <p><b>Control group(s):</b> n=79</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> Immediately after intervention and/or cleaning: 4.14 (1.73), 0.96</p> <p><b>End point:</b> NR</p> <p><i>Autonomous project motivation (T1c)</i>  <i>Mean (SD), <math>\alpha</math>:</i></p>	<p>decrease may be related to a phenomenon observed in the dental clinic field, namely, that patients exert extra effort in cleaning their teeth right before their clinic visit, which would remove plaque. If, at follow-up, these control group participants, who showed only a small increase in dental behaviours (Cohen's <math>d = .19</math>; 95% CI [.02 to .35]) relative to a large increase in the experimental group (Cohen's <math>d = .64</math>; CI [.48 to .80]), exerted extra effort they would have removed plaque without affecting the gingivitis that resulted from inadequate dental behaviours for the prior 5.5 months. If this were true, it would emphasise the importance of having a competence-enhancing intervention, such as the one in this trial,</p>

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	<p><b>% of selected individuals agreed to participate:</b> 49 refused to participate (out of 207) = 23.7%</p> <p><b>Potential sources of bias:</b> NR</p>	<p>Initial exam: plaque and gingivitis.</p> <p>Psychological questionnaire: covering autonomy orientation, perceived competence, autonomous motivation for home care, dental behaviours, and demographics.</p> <p>Followed by teeth cleaning done in an autonomy-supportive way.</p> <p>All participants responded to questionnaires assessing perceived clinic autonomy support and autonomous motivation for the dental project.</p> <p>Follow-up after 5.5 months: questionnaire covering perceived competence, autonomous motivation for home care, dental behaviours. Dental clinic exam: plaque, gingivitis. (Followed by teeth cleaning and debriefing).</p> <p>(The control group were also offered the intervention after the trial had concluded)</p> <p><b>By whom:</b> Dental hygienist</p> <p><b>To whom:</b> Participants (university students)</p> <p><b>How delivered:</b> Teeth cleaning was done in an autonomy-supportive way.</p>	<p>interest to do so."</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Yes - The scales for measuring motivation variables were found reliable in previous research: perceived competence and autonomous motivation for home care (as .88 and .81, respectively, Halvari et al., 2010, <i>in press</i>[a]).</p> <p><b>Unit of measurement:</b> 7-point Likert scale from 1 (not at all true) to 7 (very true)</p> <p><b>Time points measured:</b> Prior to randomisation and after 5.5 months</p> <p><b>Outcome name:</b> Perceived dental competence (T1a and T2)</p> <p><b>Outcome definition:</b> This was assessed by the Dental Coping Beliefs Scale (Wolfe, Stewart, Meader, and Hartz, 1996) using the five items with the best factor loadings (see</p>	<p><b>Total sample:</b> NR</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> NR</p> <p><b>Intervention group(s):</b> n=79</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> Immediately after intervention and/or cleaning: 6.01 (0.84), 0.91</p> <p><b>End point:</b> NR</p> <p><b>Univariate ANOVA result – intervention</b> <math>F=52.68</math> Cohen's <math>d=0.92</math> 95% CI= 0.63-1.22 <math>p&lt;0.001</math></p> <p><b>Control group(s):</b> n=79</p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> Immediately after intervention and/or cleaning: 4.80 (1.22), 0.91</p> <p><b>End point:</b> NR</p> <p><i>Autonomous motivation for dental home care (T1a and</i></p>	<p>because it would indicate that just standard care, even if autonomy supportive, was not adequate to yield the desired outcome. Future research could shed further light on this (p.786).</p> <p><b>Source of funding:</b> The Faculty of Odontology, University of Oslo, funded the 4-year PhD period (not whole study)</p> <p>The Norwegian Ministry of Health, funded part of the study, which made it possible to engage a second dental hygienist to perform the "blinded" measures of dental plaque and gingivitis.</p>

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		<p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Cleaning and questionnaire twice - (pre and post intervention)</p> <p><b>How long for:</b> Study took place over 5.5 months.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 158</b></p> <p><b>Intervention group N = 79</b></p> <p><b>Control Group N = 79</b></p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b></p> <p>Among completers, the experimental and control groups were not significantly different in baseline measures (logistic regression), demographics, or in the time between T1 and T2 assessments (ANOVA). There were, however, significant gender differences in the make-up of the 2 groups (<math>p&lt;0.01</math>) with more females (57.42%) in the control group than the experimental group (42.48%). Thus gender was controlled for in the subsequent multivariate analysis of variance. Gender was found not to be significant as a main effect or interaction.</p>	<p>Halvari and Halvari, 2006) and 2 added items from a previous study (Halvari et al., 2010). A sample item is, "I believe I can remove most of the plaque from my teeth on a daily basis."</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Yes - The scales for measuring motivation variables were found reliable in previous research: perceived competence and autonomous motivation for home care (as .88 and .81, respectively, Halvari et al., 2010, in press[a]).</p> <p><b>Unit of measurement:</b> Scale: 1 (not at all true) to 7 (very true)</p> <p><b>Time points measured:</b> Prior to randomisation and after 5.5 months</p> <p><b>Outcome name:</b> Dental health behaviour (T1a and T2)</p> <p><b>Outcome definition:</b></p>	<p><b>T2)</b>  <b>Mean (SD), <math>\alpha</math>:</b></p> <p><b>Total sample:</b>  <b>Baseline:</b> NR  <b>Follow up (all time points):</b> N/A  <b>End point:</b> NR</p> <p><b>Intervention group(s):</b>  <b>Baseline:</b> 5.85 (0.89), 0.76  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 5.83 (0.79), 0.72</p> <p><b>Other results:</b> <math>F=0.23</math>  Cohen's <math>d=0.09</math> 95%  <math>CI= -0.26</math> to 0.10  <math>p&gt;0.05</math></p> <p><b>Control group(s):</b>  <b>Baseline:</b> 5.96 (0.90), 0.76  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 5.85 (0.99), 0.72</p> <p><i>Perceived dental competence (T1a and T2)</i>  <b>Mean (SD), <math>\alpha</math>:</b></p> <p><b>Total sample:</b></p>	

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		<p><b>Study sufficiently powered (power calculations and provide details):</b></p> <p>A power analysis using data from a previous study (Halvari and Halvari 2006) indicated that the necessary number of participants in each group should be 14 for dental plaque, to detect significant differences (using <i>t</i> tests) between averages for the experimental and control groups with a power of .90 (<math>\alpha=.05</math>).</p>	<p>Dental health behaviour was assessed by a 4-item formative composite scale (Halvari et al., 2010). The items are (a) "I am very determined to brush my teeth as accurately as possible," using a 1 (not at all true) to 7 scale (very true), (b) "How often do you brush your teeth?" using responses from 1 (quite seldom) to 5 (3 times a day or more); (c) "How often do you use dental floss for cleaning the areas between your teeth" using responses from 1 (never) to 5 (daily); and (d) "How many regular meals do you have per day?" using responses from 1 (1 meal) to 5 (5 or more meals).</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Scales (various): 1 (not at all true) to 7 (very true); 1 (quite seldom)</p>	<p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> NR</p> <p><b>Intervention group(s):</b></p> <p><b>Baseline:</b> 4.30 (0.86), 0.80</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> 5.17 (0.84), 0.86</p> <p><b>Other results:</b> <math>F=4.30</math> Cohen's <math>d=0.37</math> 95% <math>CI= 0.20</math> to <math>0.59</math> <math>p&lt;0.05</math></p> <p><b>Control group(s)</b></p> <p><b>Baseline:</b> 4.37 (0.98), 0.80</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> 5.17 (0.84), 0.86</p> <p><i>Dental health behaviour (T1a and T2)</i></p> <p><i>Mean (SD):</i></p> <p><b>Total sample:</b></p> <p><b>Baseline:</b> NR</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> NR</p>	

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			<p>to 5 (3 times a day or more); 1 (never) to 5 (daily); and 1 (1 meal) to 5 (5 or more meals)</p> <p><b>Time points measured:</b> Prior to randomisation and after 5.5 months</p> <p><b>Outcome name:</b> Plaque (T1a and T2)</p> <p><b>Outcome definition:</b> The Dental Plaque Index (Löe, 1967) reflects soft deposits on the tooth surface and is anchored by a scale ranging from a score of 0 (absence of plaque) to 3 (abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin)</p> <p><b>Outcome measure:</b> Index score</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Ranges from 0 (absence of plaque) to 3 (abundance of soft matter within the gingival pocket and/or on the tooth and</p>	<p><b>Intervention group(s):</b>  <b>Baseline:</b> 3.70 (0.59)  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 4.11 (0.55)  <b>Other results:</b> <math>F=0.90</math>  Cohen's <math>d=0.16</math> 95%  <math>CI= 0.04</math> to <math>0.30</math>  <math>p&gt;0.05</math></p> <p><b>Control group(s)</b>  <b>Baseline:</b> 3.76 (0.71)  <b>Follow up (all time points):</b> N/A  <b>End point:</b> 3.87 (0.62)</p> <p><b>Attrition details:</b>  <b>Intervention group:</b> 9 dropped out due to general sickness, travel or time constraints.  <b>Control group:</b> 8 dropped out due to general sickness, travel or time constraints.  Baseline characteristics of dropouts were assessed and it was found that dropout</p>	

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			<p>gingival margin)</p> <p><b>Time points measured:</b> Prior to randomisation and after 5.5 months</p> <p><b>Outcome name:</b> Gingivitis (T1a and T2)</p> <p><b>Outcome definition:</b> The Dental Gingival Index (Löe, 1967) is anchored by scores ranging from 0 (absence of inflammation) to 3 (severe inflammation, marked redness and hypertrophy; tendency for spontaneous bleeding; ulceration.). An Explorer Periodontal double-ended Probe LM23-52B was used for all examination procedures.</p> <p><b>Outcome measure:</b> Index score</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Ranges from 0 (absence of inflammation) to 3 (severe inflammation, marked redness and</p>	<p>was not due to baseline or background characteristics.</p> <p><b>Conclusion:</b> The current randomised clinical trial clearly showed that a competence-enhancing intervention, delivered in an autonomy supportive manner, improved motivation, perceived competence, dental health behaviours, plaque, and gingivitis relative to standard care treatment carried out in an autonomy-supportive way. Combined with a previous trial by Halvari and Halvari (2006), this emphasises the importance of dental professionals relating to their patients in autonomy-supportive and competence-enhancing ways for patients' improved oral health.</p>	

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			<p>hypertrophy; tendency for spontaneous bleeding; ulceration.).</p> <p><b>Time points measured:</b> Prior to randomisation and after 5.5 months</p> <p><b>Method of analysis (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</b></p> <p>No mention is made of ITT and the numbers quoted for the analysis in Fig 1 exclude the drop-outs.</p> <p>Repeated measures MANOVA was used to examine the hypothesis for perceived dental competence, autonomous motivation for dental home care, dental behaviour, plaque and gingivitis at T1a [baseline] and T2 [5.5 month follow-up], followed by five</p>		

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			<p>repeated measures ANOVA.</p> <p>For variables that were measured only one time, univariate ANOVAs were used.</p>		

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> David M O'Hara, Patricia Seagriff-Curtin, Mitchell Levitz, Daniel Davies and Steven Stock</p> <p><b>Year:</b> 2008</p> <p><b>Citation:</b> O'Hara, D.M., et al., Using Personal Digital Assistants to improve self-care in oral health. <i>Journal of Telemedicine and Telecare</i>, 2008. 14(3): p. 150-1.</p> <p><b>Country of study:</b> Not stated—presumably USA</p> <p><b>Aim of study:</b> To evaluate the potential of Personal Digital Assistant (PDA) technologies to improve the oral health of people with mild to moderate intellectual disabilities, chronic</p>	<p><b>Source Population(s):</b> NR</p> <p><b>Setting:</b> Specialist dental clinic (p.150 para.3)</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> All participants had intellectual disabilities and/or chronic health problems (p.150 para.3)</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population (describe how</b></p>	<p><b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> NR</p> <p><b>Report how confounding factors were minimised:</b> NR</p> <p><b>Programme/Intervention description:</b></p> <p><b>What was delivered:</b> Oral health video and audio materials were prepared that demonstrated effective oral hygiene practices. These materials were edited, digitised and transferred to PDAs running a customised software application that controlled the standard features of the PDA so that the prompting and coaching features only were enabled. Patients were trained in the use of the PDAs at a regular dental appointment and the alarm and prompting features of the software were set to their individual specifications. (p.140 para.4)</p> <p><b>Theoretical basis:</b> The authors do cite an earlier study which found that a multimedia training programme can help adults with</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Change in oral health status/ utilisation of PDA</p> <p><b>Outcome definition:</b></p> <p><b>Outcome measure:</b> The utilisation of the PDA and any change in oral health status was tracked by obtaining anecdotal information from direct care support staff when they brought patients in for dental appointments and when they telephoned for technical support. Oral health status was measured on a 4-point scale along 12 dimensions including the overall gingival colour and texture, gingival inflammation, plaque accumulation, supra and subgingival</p>	<p><b>Oral health (clinical) results:</b></p> <p><b>Change in oral health status:</b> Ten participants achieved improvement in at least three areas of oral health (no further details provided) (p.151 para.2)</p> <p><b>Behavioural results:</b></p> <p><b>Utilisation of PDA:</b> The training provided enabled almost all the patients to master the use of the technology and follow the oral hygiene instructions displayed on the PDAs. However more than half of the patients reported problems keeping the PDAs functioning properly (mainly keeping batteries charged) for the duration of the project.</p> <p><b>Attrition details:</b> 11 patients dropped out of the study.</p>	<p><b>Limitations identified by author:</b> NR</p> <p><b>Limitations identified by review team:</b></p> <p>It isn't actually clear the study was undertaken in the USA although the conclusion and authorship suggest it was. The focus is on patients at a specialist dental clinic.</p> <p>Information on recruitment is limited and there is no consideration of whether this sample is representative of other patients attending specialist clinics. The study is only a pilot so it does not claim to be representative.</p> <p>While selection of the eligible population has a clear rationale it is not clear how</p>

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<p>health problems and a long-standing history of poor oral health self-care. (Summary)</p> <p><b>Study design:</b> Quantitative Pilot Evaluation</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity (++, +, or -):</b> + That is the + and - borderline - however this paper has considerable limitations not covered in this average score. It should be noted that this is only an explorative study and the conclusions should be treated with extreme caution.</p>	<p>individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Individuals who had been receiving regular dental care from a single dental practice specialising in the care of people with intellectual disabilities and chronic health problems. The study patients were all on recall dental visits every 3 months because of their poor oral health. (p.150 para.3)</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b></p> <p><b>Inclusion Criteria:</b> All participants had intellectual disabilities and/or chronic health problems (p.150 para.3)</p>	<p>learning difficulties perform community-based vocational tasks (p.150 para 2)</p> <p><b>By whom:</b> NR</p> <p><b>To whom:</b> 36 patients</p> <p><b>How delivered:</b> Training</p> <p><b>When/where:</b> Specialist dental clinic (p.150 para 3)</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> Within a day</p> <p><b>Total sample N = 36</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): N/A</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): NR</p>	<p>calculus, mouth odour and extent of tongue coating (p.150 para.5)</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Score on a 4 point scale</p> <p><b>Time points measured:</b> This information was gathered for a period of 6 months, which included 2 dental visits. At each dental appointment the same dentist completed the multi-item oral health scale. (p.150 para.5)</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): NR</p> <p>(NOTE: this paper was less than 2 pages long and gave very little detail)</p>	<p><b>Conclusion:</b> The results of this small pilot project indicate the potential for customisable consumer technologies to improve self-care among groups with chronic health problems. (p.151 para 3)</p> <p>Our approach addressed the limitations of current health promotion strategies that result from poor health literacy by providing alternative communication strategies and customised health education and health promotion instructions using telecommunications technologies. (p.151 para 4)</p>	<p>participants were selected from within this population.</p> <p>Detailed results of the outcome measurements were not given. For example 10 participants achieved improvements in at least 3 areas of oral health but there is no information on what those areas are.</p> <p>When it came to the oral health outcome no other variables were considered besides the PDA.</p> <p>11 patients dropped out of the study and there is no information on whether this was due to them finding it difficult to use the PDA. Baseline differences in education and the level of disability do not appear to have been considered.</p> <p>The sample size is</p>

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	<p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b></p>				<p>very small (just 36 before attrition).</p> <p>Overall this study should be seen as a purely exploratory pilot study – further research with more detail would be needed in order to generate robust findings in this area.</p> <p><b>Evidence gaps:</b> NR</p> <p><b>Source of funding:</b> Partly funded by a grant from the Joseph P Kennedy Foundation.</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<b>Author:</b> Ostberg, AL <b>Year:</b> 2005 <b>Citation:</b> Ostberg, AL (2005) Adolescents' views of oral health education. A qualitative study. Acta Odontologica Scandinavica, 63: 300-307 <b>Country of study:</b> Sweden <b>Quality Score (++, +, or -) ++</b>	<b>Study design:</b> Qualitative <b>Research aims, objectives, and questions:</b> To investigate how adolescents perceive oral health education and what they expect from it. A second aim was to apply a gender perspective to the investigation. <b>Theoretical approach [grounded theory, IPA etc]:</b> Data were analysed according to the basic principles of the constant comparative method. Subsequently data were interpreted by the author and repeatedly discussed with a sociologist who had access to the entire data set. <b>State how data were collected:</b> <b>What method(s):</b> A series of focus group discussions; two gender-specific and one mixed group were created for each school level, six groups in total. <b>By whom:</b> Discussions were moderated by the author (a dentist) who had been trained in the facilitation of focus	<b>Population the sample was recruited from:</b> Adolescents from Skaraborg County, Sweden; a rural area with a few medium sized towns and small municipalities. <b>How sample was recruited:</b> Purposive sampling through school nurses in Skaraborg County, Sweden. The nurses gave the same information to all the classes and were instructed, based on their knowledge of the students, to recruit participants who represented a broad range of characteristics. All potential informants were also given a written invitation with information about the study. Letters were sent to the parents of those under 18 years of age. Written consent was collected from the informants and, for the younger informants, from their parents. <b>How many participants recruited:</b> 34 <b>Sample characteristics:</b> <b>Age:</b> 14-16 year olds and 18-19 year olds	<b>Brief description of method and process of analysis [including analytic and data collection technique]:</b> The study was carried out in a series of focus group discussions during 2003-2004. Two gender-specific, and one mixed-group were created for each school level, six groups in all. The groups constituted four to nine persons sitting around a table – one group with four, three with five, one with six, and one with nine participants. Group size was intended to be four to six persons. In one class, however, all boys (nine 15 year olds) wanted to join the group. The discussions were moderated by the author (a dentist) who had been trained in the facilitation of focus groups, and lasted approximately 50-70 minutes. An observer with a non-dental profession sat to the side to assist in the note-taking of non-verbal communication. Before the tape recorder was turned on, general information about the study, including confidentiality and the voluntary nature of the study, was repeated. After each session, the observer was given the opportunity to ask the group additional questions. Moreover, when the participants had left the room, the	<b>Limitations identified by author:</b> NR <b>Limitations identified by review team:</b> Data was only collected by one method although non-verbal responses were recorded by an observer. However the methods do investigate what they claim to. Although the contexts of the data are well described, and the diversity of perspective and content was explored, only the top-level detail and depth of responses was analysed and responses were rarely compared and contrasted across groups/sites. However, for the latter two points, this may not have been necessary for the purpose of this research. Only one researcher themed and coded the data, however they did consult a sociologist, but there is no detail about whether the

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	<p>groups. An observer with a non-dental profession sat to the side to assist in the note-taking of non-verbal communication.</p> <p><b>What setting:</b> Small rooms in schools. Groups constituted four to nine persons sitting around a table</p> <p><b>When:</b> Between 2003 and 2004</p>	<p><b>Sex:</b> Both male and female</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Sweden</p> <p><b>Occupation:</b></p> <p><b>Education:</b> Senior level and upper secondary schools</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion criteria:</b> NR</p> <p><b>Exclusion criteria:</b> NR</p>	<p>moderator and the observer summarised and discussed each other's impressions of the session. When the last focus group session was completed, no new themes or data emerged; the saturation point was considered to have been reached.</p> <p>The areas of focus for the group discussions were the adolescents' of the oral health education that they had experienced in different settings and under varying circumstances [only findings pertaining to the dental practice setting will be reported here]. Typical entry points were as follows: "When you got this invitation and you realised that the topic was dental care, what did you think?"; "When you last visited the dentist, what happened? What was it like?"; Where do you find (health) information about your teeth and mouth?"</p> <p>Discussions were tape-recorded and transcribed verbatim. The author listened to the tapes and added the observer's notes to the transcripts. Text was initially coded by underlying substantive words and phrases in participant statements. Related codes were grouped in categories. Codes and categories were continually compared with the interview protocols. The commonalities and contradictions reflected in the data</p>	<p>sociologist's involvement altered the direction of the results. It was not reported if participants fed back on the data, or if negative/discrepant results were addressed or ignored.</p> <p>There was no discussion of any of the limitations of the research.</p> <p>The study was approved by an ethics committee but no other reference to ethics was given. Consequences were not considered.</p> <p><b>Evidence gaps and/or recommendations for future research:</b> As a growing health concern in many populations, dietary issues were not extensively addressed in this research and could be explored in further research.</p> <p><b>Source of funding:</b> The financial support of the Skaraborg Institute is gratefully acknowledged.</p>

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			<p>were systematically analysed. Attempts were made to represent all the voices in order to cater for the range in talkativeness and opinions in the groups.</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p>In the analysis of the data, two core categories emerged, giving deeper understanding of successful oral health education among adolescents: “credibility” (the quality, capability, or power to elicit belief) and “confidence” (trust or faith in a person or thing). These two central phenomena were related to each other and constantly interacted. The themes that emerged in the interviews concerning oral health education in different settings and outcomes of such activities were all related to the two core categories.</p> <p><b>Oral health education in the dental clinic</b></p> <p>The amount of information given to the participants about how to take care of their teeth and mouth probably differed. Some considered the information they had received to be sufficient, but often the participants wished to be taught more</p>	

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			<p>at the dental visit. Although they can ask for information, the atmosphere is often perceived as strict and not confidential. There are obstacles to posing questions:</p> <p><i>"They say you have forgotten to brush the back teeth, for instance... but you cannot ask... How do I brush them, then? You have to try, anyhow... you don't ask much when you're there"</i> (Girl, 15 years old)</p> <p>The way information was given could be positively perceived, but was often considered strict and a little dull:</p> <p><i>"They are not always good at being cheerful"</i> (Boy, 19 years old)</p> <p>Some related positive memories of receiving information at the dental services in childhood, in contrast to the present situation:</p> <p><i>"...when I was little... they showed me how to brush... and that was easy to understand... like talking to a child... that was good then. They can talk if they want to, but otherwise"</i> (Boy, 19 years old)</p> <p>Some informants spoke about occasionally being given oral health information. The messages from these occasions were vaguely remembered. Experiences of</p>	

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			<p>instructions in oral hygiene were mostly positive, and their own responsibility was acknowledged:</p> <p><i>“Anyhow, I think you get clear information... then it is your own responsibility to find out...”</i> (Girl, 19 years old)</p> <p>However there were clear indications that dental personnel often only attended to deficiencies in oral hygiene, whereas good hygiene rendered few or no comments. When they received no information, the adolescents could interpret this as a sign there was nothing to worry about and no need to ask:</p> <p><i>“I don’t know if they need to give me information, because I didn’t get any. I do not think I needed any”</i> (Boy, 19 years old)</p> <p>Information on the use of floss was obviously confusing:</p> <p><i>“...they keep telling you to floss, yes, you should do that... but how, no...”</i> (Girl, 15 years old)</p> <p><i>“You get the impression that it’s not that important then... you should brush every day, but floss... that’s something you can do now and then...”</i> (Girl 15 years old)</p>	

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			<p>Dietary advice in the clinical setting was seldom discussed in any of the groups. In one group, information in earlier ages was remembered as “the usual old stuff”, referring to restrictions in candy consumption.</p> <p>The behaviour of the dental personnel is important for creating a confidence-building setting, and most participants had perceived that treatment was properly carried out. However, some indicated that they did not feel they were “heard or seen”. The dental personnel sometimes talked about, and not to, the patients, although they were present in the room. They were treated as objects and felt as if the personnel were “talking over their heads”.</p> <p>The quality of the clinical treatment, such as fillings, was not questioned in any group. However, the periods between dental check-ups were discussed and were often perceived as too long. Some informants even thought that they had been forgotten by the dental services or lost in the recall system. The main reason for individualised and extended recall periods in Swedish dental services today – that patients are placed in different risk categories and the length of the recall period depends on the risk category – was not discussed</p>	

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			<p>in any of the groups. In two of the groups (one with younger and one with older adolescents), distrust was expressed, and the dental services were suspected of postponing treatment until the patients had to pay themselves (in Sweden from the age of 20). A credibility gap was created:</p> <p><i>“...some people say... that they save the cavities until you have to pay...then you panic a little. You feel that they charge you money, they do not think of a person’s teeth...”</i> (First girl, 19 years)</p> <p><i>“Yes, I was there some time ago... they said that I had a small cavity, but it was too small to fill and that I should come back next year... I was very angry and demanded that he fill it... so I’m going there again to have it done”</i> (Second girl, 19 years old)</p> <p>The second girl quoted above was the only participant who reported a confrontation with dental personnel. The pace of work at the dental offices is often high, and this was noted by the adolescents:</p> <p><i>“You can see that they have a strict schedule. They have to try and be on time with their patients... but it is perhaps not always that good to go full steam ahead and hope that all will turn out well... And if you are there just once a year, it would perhaps be</i></p>	

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			<p><i>best to take the time to go through it [the information] properly</i>” (Girl, 15 years old)</p> <p>The participants were uncertain about their knowledge of oral health, both consciously and unconsciously. Although some considered their own knowledge to be sufficient in open statements, the subsequent discussions exposed uncertainty. There was a need to get feedback:</p> <p><i>“...you don’t know the standard, how much you should do or what you should do at all...”</i> (Girl, 15 years old)</p> <p>The causal relationship between insufficient approximal hygiene and gingivitis was not understood by the informants in any of the groups. When flossing was practiced, it was often neglected after a short time:</p> <p><i>“It’s too tight, and then you force too hard... then it starts to bleed...then it hurts...and then you skip it”</i> (Girl, 15 years old)</p> <p><i>“They keep telling me to floss... they (the teeth) sit so tight together, so it just bleeds... I think it’s just tiresome”</i> (Girl, 19 years old)</p> <p>Thus, even if the informants did display knowledge of certain oral health topics, they did not always</p>	

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			<p>succeed in practicing healthy habits. Other activities were often given priority, especially under time constraints: <i>“If I am in a hurry in the morning”</i>.</p> <p>The need for, and interest in, knowledge could be projected to other persons, who were considered to need it better:</p> <p><i>“...more for those who have problems, they are probably more interested...”</i> (First boy, 19 years old)  <i>“Yes more...”</i> (Second boy, 19 years old)  <i>“I don’t often need to go to the dentist. I only go to the check-ups”</i>  (First boy, 19 years old)</p> <p><b>Conclusions:</b></p> <p>This study indicates that the credibility of the people delivering the health messages is essential, as is their ability to create confidence during the encounter in the dental setting. When oral health education is perceived to be credible, it generates confidence. Likewise, when confidence is perceived, the oral health messages will be credible. Thus, oral health education among adolescents is more likely to be successful when credibility and confidence are perceived.</p>	

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<p><b>Author:</b> Poole, J., Conte, C., Brewer, C., Good, C., Perella, D., Rossie, K. M. and Steen, V.</p> <p><b>Year:</b> 2010</p> <p><b>Citation:</b> Poole, J., Conte, C., Brewer, C., Good, C., Perella, D., Rossie, K. M. and Steen, V. (2010) Oral Hygiene in scleroderma: the effectiveness of a multidisciplinary intervention programme, <i>Disability and Rehabilitation</i>, 32(5), 379-384.</p> <p><b>Country of study:</b> America</p> <p><b>Aim of Study:</b> To investigate whether oral hygiene improves after persons with scleroderma receive structured</p>	<p><b>Source</b>  <b>Population(s):</b> Country of study (include if developed or non-developed)  <b>NR</b></p> <p><b>Setting:</b> NR</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b>  <b>Age:</b> The mean age at baseline was 55.4 years of age for participants with diffuse scleroderma and 52.4 years of age for participants with limited scleroderma.  <b>Sex:</b> NR  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> NR  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic</b></p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): [quality assessment]  <b>N/A</b> One group pre-post test design</p> <p><b>Report how confounding factors were minimised:</b> N/A – Before and After Study</p> <p><b>Programme/Intervention description:</b>  <b>What was delivered:</b> Dental intervention consisted of dental prophylaxis including scaling and root planning by a registered dental hygienist. Each participant also reviewed a patient education videotape on proper brushing and flossing. Individual instructions to be used at home were given along with a 6 month supply of dental products. Occupational therapy intervention consisted of participants being shown a video on hand and facial and oral augmentation exercises. Each participant received individual instructions of exercises to be performed at home.</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Number of sites bleeding on probing</p> <p><b>Outcome definition:</b> Number of sites bleeding on probing</p> <p><b>Outcome measure:</b> Number</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Number of sites with pocket depth greater or equal to 4mm</p> <p><b>Outcome definition:</b> Number of sites with pocket depth greater or equal to 4mm</p> <p><b>Outcome measure:</b> Number</p>	<p>For each outcome report  <b>Means, SDs, p-values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b></p> <p>Intervention group(s): PHP score  Baseline: Mean=3.3, SD=0.64  Follow up: Mean=2.9, SD=0.64  End point: Mean=2.7, SD=0.51</p> <p>Intervention group(s): Number of sites bleeding on probing  Baseline: Mean=8.5, SD=21.2  Follow up: Mean=10.1, SD=14.1  End point: Mean=2.5, SD=3.7</p> <p>Intervention group(s): Number of sites with pocket depth greater than or equal to 4mm  Baseline: Mean, 8.0, SD=15.3</p>	<p><b>Limitations identified by author:</b></p> <p>There may have been observer differences in classifying incipient decay examination.</p> <p>The subjects were not contacted on a regular basis to ensure compliance with exercises or dental programme.</p> <p><b>Limitations identified by review team:</b></p> <p>The source population is only partially described.</p> <p>It is unclear whether the eligible population is of the source population.</p> <p>Although participants who withdrew from the study were</p>

<p>oral hygiene instructions and facial and hand exercises.</p> <p><b>Study Design:</b> A one-group pre-test/post-test study design was used for this study. Participants were seen for a baseline visit (month 0), a pre-intervention visit (month 6), and a post-intervention visit (month 12).</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity</b>(++, +, or -): +</p>	<p><b>position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Persons with scleroderma. Participants were identified through the University's Systematic Sclerosis Database</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR</p> <p><b>Inclusion Criteria:</b> Inclusion criteria included meeting the American College of Rheumatology [formerly, the American Rheumatism Association] criteria for definite or probable systemic sclerosis [scleroderma] and participants had to</p>	<p>Facial grimacing exercises consisted of 6 exercises performed in 3 sets of five stretches, each held for 3–5 s for example open mouth as wide as possible.</p> <p>Oral stretching exercises consisted of putting the right thumb in corner of the left side of the mouth and stretching, switching thumbs to stretch the right side of the mouth, and finally, stretching with both thumbs at the same time. Then an oral augmentation exercise was done by inserting tongue depressors between the teeth from the left premolar area to the right molar region.</p> <p>The hand exercises consisted of making a fist, pressing the fingers flat against each other, and touching the thumb to the base of the little finger. These exercises were performed in 3 sets of 5 stretches, held for 3–5 s, twice a day.</p> <p>At baseline, participants received a dental X-ray, and measures of oral hygiene and oral aperture, and dominant upper extremity functioning that were described above. 6 months later at the pre-intervention visit, participants repeated the same set of measures at the baseline visit</p>	<p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Number of teeth with recession greater than or equal to 3mm</p> <p><b>Outcome definition:</b> Number of teeth with recession greater than or equal to 3mm: measurements of the recession of the gingival margin onto the root surface in millimetres</p> <p><b>Outcome measure:</b> Number</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Number of teeth with supragingival calculus or subgingival</p>	<p>Follow up: Mean: 7.7, SD=11.7  End point: Mean=8.9, SD=11.7</p> <p>Intervention group(s): Number of teeth with recession greater than or equal to 3mm  Baseline: Mean: 3.0, SD=2.6  Follow up: Mean=2.6, SD=4.3  End point: Mean=1.8, SD=2.7</p> <p>Intervention group(s): Number of teeth with supragingival calculus  Baseline: Mean=0.27, SD=0.16  Follow up: Mean=0.27, SD=0.13  End point: Mean=0.17, SD=0.87</p> <p>Intervention group(s): Number of teeth with subgingival calculus  Baseline: Mean=0.35, SD=0.33  Follow up: Mean=0.37, SD=0.37  End point: Mean=0.16, SD=0.26</p> <p>Intervention group(s): Number of caries</p>	<p>mentioned no demographic information was provided for these individuals.</p> <p>It was not reported whether the setting in which the study occurred reflected usual UK practice.</p> <p>A control study is needed in order to assess the full impact of these results.</p> <p>It was not reported whether an intention to treat analysis was conducted.</p> <p>Only p-values were included within the results section.</p> <p>No issues were reported with the analytical methods which were chosen.</p> <p>Intervention effects were only shown through p-values.</p> <p>The results may not be entirely generalizable across</p>
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	<p>have a minimum of 12 teeth. A minimum of 12 teeth was deemed necessary so that the hygienist could examine the 6 required teeth on the Patient Hygiene Performance Index or their substitution if a tooth was missing, broken, or had a crown.</p> <p><b>Exclusion Criteria:</b> Participants were excluded if they were on anticoagulation therapy, had a diagnosis of secondary Sjogrens Syndrome, or lived outside a 100 mile radius of the medical centre.</p> <p><b>% of selected individuals agreed to participate:</b> 2 participants dropped out due to extenuating personal circumstances, one subject dropped out due to disease progression, and the other dropped out</p>	<p>except for the X-ray. At this time, participants were also given a customised intervention programme for both dental hygiene and upper extremity function. The intervention lasted 6 months. At the end of the 6 months, at the post-intervention visit, participants received the same evaluations (except the X-ray) as they had at the pre-intervention visit.</p> <p><b>Theoretical basis:</b> NR</p> <p><b>By whom:</b> Dental hygienists</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b></p> <ul style="list-style-type: none"> <li>Dental history taken and x-ray</li> <li>PHP Index to measure oral hygiene</li> <li>Oral aperture measured</li> <li>Xerostomia questionnaire for salivary dysfunction</li> <li>Measurement of upper extremity function</li> <li>Dental prophylaxis</li> <li>Hygiene instructions and 6 month supply of dental products</li> <li>Facial and oral Exercise instructions at home</li> <li>Timed dexterity</li> <li>KT testing</li> <li>Strength testing</li> </ul> <p><b>When/where:</b> NR</p> <p><b>How often:</b> Baseline, 6 months and 12 months</p> <p><b>How long for:</b> 12 months</p>	<p>calculus</p> <p><b>Outcome definition:</b> Number of teeth with supragingival calculus. Number of teeth with subgingival calculus</p> <p><b>Outcome measure:</b> Scale</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b></p> <ul style="list-style-type: none"> <li>0 = absence of calculus</li> <li>1 = supragingival calculus, but no subgingival calculus present</li> <li>2 = presence of both supragingival and subgingival calculus or presence of subgingival calculus only</li> </ul> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Number of caries</p> <p><b>Outcome definition:</b> Number of decayed, missing and filled permanent teeth</p> <p><b>Outcome measure:</b> Number</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Number</p>	<p>Baseline: Mean=0.65, SD=1.2</p> <p>Follow up: Mean=0.24, SD=0.56</p> <p>End point: Mean=0.53, SD=1.07</p> <p>Intervention group(s): Incisor vertical distance (mm)</p> <p>Baseline: Mean=38.5, SD=6.7</p> <p>Follow up: Mean=38.8, SD=7.1</p> <p>End point: Mean=39.1, SD=7.8</p> <p>Intervention group(s): Lip vertical distance (mm)</p> <p>Baseline: Mean=49.1, SD=7.5</p> <p>Follow up: Mean=52.7, SD=7.5</p> <p>End point: Mean=48.1, SD=7.3</p> <p>Intervention group(s): Xerostomia</p> <p>Baseline: Mean=1.9, SD=1.9</p> <p>Follow up: Mean=1.7, SD=1.9</p> <p>End point: Mean=2.2, SD=2.0</p> <p>None of the dental measures changed significantly from</p>	<p>the source population.</p> <p><b>Evidence gaps:</b> Future controlled studies are needed in which subjects are randomly assigned to intensive treatment and routine care groups.</p> <p>Participants also need to be followed and treated over a longer time period.</p> <p>To increase sample size, a multi-centre study may be necessary.</p> <p><b>Source of funding:</b> This study was supported in part by The Arthritis Foundation, the Western Pennsylvania Chapter of the Arthritis Foundation, and the University of Pittsburgh Research Development Fund. Dental products were supplied by CREST, Butler, Laclede Co., and</p>
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<p>due to recurrent hospitalisations for infections.</p> <p><b>Potential sources of bias:</b> NR</p>	<p><b>Sample size at baseline:</b> 17</p> <p><b>Total sample N = 17</b></p> <p><b>Intervention group N = 17</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): The final group of 17 participants consisted of 9 persons (9 females) with diffuse scleroderma and 8 persons (6 females, 2 males) with limited scleroderma. The mean age at baseline was 55.4 years of age for participants with diffuse scleroderma and 52.4 years of age for participants with limited scleroderma. Mean disease duration at baseline was 10.5 years for the diffuse participants and 11.0 years for those with limited scleroderma.</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): NR</p>	<p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Oral hygiene</p> <p><b>Outcome definition:</b> Patient Hygiene Performance Index (PHP)</p> <p><b>Outcome measure:</b> 0 to 5</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> 0 is defined as excellent, scores 0.1-1.7 are good, scores of 1.8-3.4 are fair, and scores of 3.5-5 are poor.</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Oral aperture</p> <p><b>Outcome definition:</b> Both maximum lip and teeth aperture were measured with a millimetre ruler. Lip aperture was measured as the inner vertical distance from the bottom of the top lip to the top of the bottom lip with mouth open. Teeth aperture was measured as the incisal vertical distance from the bottom of the</p>	<p>baseline to the pre-intervention visit.</p> <p>There was a significant difference in mean PHP scores and a significant decrease in the number of teeth with supragingival calculus from the baseline to post-intervention, <math>p &lt; .05</math>. The PHP scores did not significantly improve from pre-intervention to post-intervention.</p> <p>Dental measures decreased or improved from the pre-intervention to post-intervention visit but the only significant decreases were in the number of sites that bled on probing and the number of teeth with supragingival calculus <math>p &lt; .05</math>.</p> <p>The number of caries increased as did the number of sites with pocket depths of <math>\geq 4</math> cm.</p>	<p>Collis Curve.</p>
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			<p>maxillary incisors to the top of the mandibular incisors with the mouth open</p> <p><b>Outcome measure:</b> millimetres</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> millimetres</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Xerostomia</p> <p><b>Outcome definition:</b> 9 item questionnaire to assess the presence of salivary dysfunction</p> <p><b>Outcome measure:</b> 2 point scale Yes or No</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Yes (1) or no (0) and then summed to yield a total score from 0 to 9.</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Dominant upper extremity function</p>	<p><b>Behavioural results:</b> N/A</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>2 participants dropped out due to extenuating personal circumstances, one subject dropped out due to disease progression, and the other dropped out due to recurrent hospitalisations for infections.</p> <p><b>Conclusion:</b> The results suggest that the intervention home programme improved oral hygiene. The number of sites bleeding on probing and the number of teeth with supragingival calculus decreased significantly and there was a definite trend toward improvement</p>	
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			<p><b>Outcome definition:</b> Measurements of the upper extremity function included range of motion, grip and pinch strength, and dexterity. The upper extremity items from the Keital Function Test (KT), which consists of 11 performance tasks such as making a fist, touching hands to shoulders and behind the neck, was used to measure active range of motion. Scores range from 0 to 26 for each upper extremity, low scores indicate decreased joint motion. Interobserver agreement was reported as 0.85 and test-retest reliability as 0.96.</p> <p><b>Outcome measure:</b> 0 to 26</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> 0 to 26</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Grip Strength</p> <p><b>Outcome definition:</b> Grip strength was measured using a vigorimeter and</p>	<p>in the other measures.</p> <p>The number of sites with pocket depths and the number of caries increased from pre- to post intervention. A controlled study design would be needed to determine whether there was any relationship between periodontal carries and disease progression.</p> <p>Oral exercises and education regarding proper dental care may be useful in managing oral hygiene in persons with scleroderma. Persons with scleroderma should have regular dental check-ups, cleanings and specific instructions regarding difficulties with brushing or flossing their teeth.</p> <p>Decreased oral aperture and upper extremity function are related to oral hygiene. Extensive</p>	
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			<p>lateral pinch and palmer pinch were measured with a pinchmeter. The average of 3 consecutive measurements for the dominant hand for these tests used.</p> <p><b>Outcome measure:</b> Strength = kp Vigrometer and pinchmeter = kg</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Strength = kp Vigrometer and pinchmeter = kg</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Outcome name:</b> Dexterity</p> <p><b>Outcome definition:</b> Timed button test, Backman et al (1991) and Grooved Pegboard, Trites (1977). The timed button test consists of buttoning and unbuttoning five 5/8 inch buttons [19]. For the Grooved Pegboard, pegs which have a key along each side are rotated in order to be inserted in a pegboard with randomly positioned slots [20]. The</p>	
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			<p>score is the time it takes to insert the 25 pegs.</p> <p><b>Outcome measure:</b> Timed button test – buttoning/unbuttoning 5/8 inch buttons Grooved peg board – randomly positioned slots</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Speed</p> <p><b>Time points measured:</b> Baseline, Pre and post study</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): T-tests were used to compare baseline, pre and post-intervention dental and upper extremity measurements. Correlations were performed using the Pearson correlation coefficient. A p-value of &lt;.05 was chosen as statistically significant.</p>		
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Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> Serena Rajabiun, Jane E. Fox, Amanda McCluskey, Ernesto Guevarac, Niko Verdecias, Yves Jeanty, Michael DeMayo, Mahyar Mofidi,</p> <p><b>Year:</b> 2012</p> <p><b>Citation:</b> Rajabiun, S., et al., Patient perspectives on improving oral health-care practices among people living with HIV/AIDS. Public Health Reports, 2012. 127(SUPPL.2): p. 73-81.</p> <p><b>Country of study:</b> USA</p> <p><b>Quality Score (++, +, or -) +</b></p>	<p><b>Study design:</b> The study was designed to interview participants at the initial receipt of dental care and approximately 12–15 months later to ascertain participants' perceptions of the programme and its effect on their self-care practices, as well as their desire to come back for care. An open-ended interview guide was used to capture participant perceptions and experiences in their own words. (p.75 para.2)</p> <p><b>Research aims, objectives, and questions:</b> The purpose of this qualitative study was to explore the knowledge, attitudes, and practices of oral health care among PLWHA that may contribute to the access to and use of dental care services. (p.74 para.3)</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> N/A.</p> <p><b>State how data were collected:</b></p> <p><b>What method(s):</b> Each site</p>	<p><b>Population the sample was recruited from:</b> An initial subsample of 60 participants was recruited from a national study of HIV-positive patients enrolled in the Oral Health Initiative. (p.75 para.1)</p> <p><b>How sample was recruited:</b> Six study sites (two rural and four urban) volunteered to recruit eight to 10 participants each for the study. Participants were selected to reflect each site's patient demographic distribution. (p.75 para.1)</p> <p><b>How many participants recruited:</b> 39 (p.75 para.4)</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> mean was 46.5 years (range: 29-67 years)</p> <p><b>Sex:</b> Male=30 Female=9</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> All patients had HIV</p> <p><b>Ethnicity:</b> Majority from ethnic minority groups (African American/black=14; Hispanic=6; Asian or Native American=3)</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p>The initial interview focussed on prior experience with oral health care since childhood and pre and post-HIV diagnosis. This assessed personal values, knowledge, and practices, our questions included the following. (p.75 para.2)</p> <p>At the follow-up interview, participants were asked: (1) What information did you learn from participating in the Oral Health Initiative program? (2) What changes have you made with respect to taking care of your mouth, teeth, and gums (your oral health habits) since your first dental care visit with our programme? (3) What factors have made the biggest difference in your self-care practices? Interviews were conducted in English and Spanish. All interviews were recorded and transcribed for coding and analysis. (p.75 para.2)</p> <p>Thematic analysis was used to identify and report patterns within the data.<sup>19</sup> Relevant themes emerged based on frequency of discussion and expression of importance by participants. The researchers at the participating sites and multisite</p>	<p><b>Limitations identified by author:</b></p> <p>Our study consisted of a small sample of PLWHA who had access to and the opportunity for continuous dental care and treatment. The results represent the attitudes and perceptions of a small group; nonetheless, we believe they may be widespread among PLWHA. Second, our study was based on interviews and self-reported changes and was not designed to conduct observations of patient practices. There is a possibility that the participants may have provided more positive feedback about participating in the programme in an effort to ensure sustainability for dental services; however, asking open-ended questions to describe their knowledge, attitudes, and practices allowed for more in-depth responses that were trustworthy and reliable. (p.80 para.2)</p> <p><b>Limitations identified by</b></p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
	<p>implemented a programme intervention to improve access to and use of dental services for PLWHA. Interventions included using dental care coordinators, improving coordination with HIV medical care, providing transportation assistance, enhancing patient education, and setting up mobile dental units. (p.75 para.1)</p> <p><b>By whom:</b> Oral Health Initiative – more specific information is not provided</p> <p><b>What setting:</b> Oral Health Initiative sites</p> <p><b>When:</b> NR</p>	<p><b>Education:</b> NR  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>NOTE:</b> 21 respondents did not return for a follow-up interview. (p.75 para 4)</p> <p><b>Inclusion criteria:</b> All participants had been out of dental care for at least one year and were recently enrolled in dental care at the Oral Health Initiative sites. (p.75 para 1)</p> <p><b>Exclusion criteria:</b> NR</p>	<p>research centre read each transcript and developed an initial list of codes representing these themes. The coding list was used to assign segments of the narrative data at both initial and follow-up interviews. To assess knowledge and practices, participant responses were compared with the American Dental Association's (ADA's) recommended care practices for the general consumer. 2 researchers at the multisite centre checked and validated the interpretations of the data. Final selection of the narrative data was conducted by the primary researchers at the multisite research centre and shared with the researchers at the sites for accuracy in reporting results. (p.75 para.3)</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>Baseline:</b></p> <ol style="list-style-type: none"> <li><b>1) Limited knowledge and practice of oral hygiene</b> In general participants had limited understanding of appropriate oral hygiene practices in comparison with the American Dental Association's recommended practices. Few participants were able to describe recommended frequency for brushing and</li> </ol>	<p><b>review team:</b></p> <p>The sample size is small and unlikely to be representative, and the qualitative study used does provide an element of depth which would be lacking in a quantitative study. However given that the study had a baseline and a follow-up and that some of the findings at follow-up stage apparently related to improvement in oral health the addition of a quantitative element could have enhanced this study. At a minimum some quantitative data on exactly which participants reported which changes would have been useful. This does not, however, detract from the value of the qualitative data provided.</p> <p>The aim of the study was to explore knowledge, attitudes and practices amongst of oral health care among PLWHA but the actual focus of the study is on an intervention for this group and its impact.</p> <p>Some attempt was made to</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>flossing and only eight were able to describe regularly going to the dentist. Only 2 participants reported avoiding alcoholic mouthwash and using fluoride rinses. (p.76 para.2)</p> <p><b>2) Attitudes towards the importance of dental care.</b> Participants with a positive attitude towards dental care were influenced by concerns around: oral infections related to HIV; appearance; and/or employment opportunities (p.86 para.3).</p> <p><b>Impact of participation in the Oral Health Initiative:</b></p> <p><b>1) Awareness of the link between HIV health and good oral health</b> Participants described gaining knowledge about sound oral health-care practices as part of overall HIV care. Others found it helped them to eat more and feel healthier with HIV. (p.77 para.2)</p> <p><b>2) Better hygiene practices</b> Several participants described how they brush and floss with improved technique and greater frequency. Some cited positive changes in their diet but knowledge of the detrimental effects of smoking did not lead people to stop the habit. (p.77 paras.3-4)</p>	<p>get a range of different respondent demographics in the sampling. Recruitment was from an initial sub-sample from a national study and this may have biased the responses.</p> <p>The interviews are described in detail with example questions. Additional quantitative data on oral care habits (e.g. number of times brushing teeth) might have been useful.</p> <p>There is insufficient information on how the research was explained to participants.</p> <p>Participants' characteristics are given. The effect of the interviewer in terms of encouraging positive responses to oral health intentions does not appear to have been considered.</p> <p>Only one method was used and some triangulation could have been made e.g. with number of visits to the clinic or even with oral health improvements.</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>3) <b>Improved self-esteem and appearance</b>            Participants reported feeling less self-conscious and more confident in their social interactions (p.77 para.5)</p> <p>4) <b>Relief of pain and better physical and emotional health</b> (p.77 para.7)]</p> <p>5) <b>Reasons for returning to dental care</b>            For almost all participants the Orla Health Initiative made it possible to "have a place to go for care". Participants cited the free or limited costs of the services as reasons for returning. (p.77 para.8)</p> <p>6) <b>Friendly staff and dental environment</b> (p.77 para.9)</p> <p>7) <b>Finding and HIV knowledgeable dentist</b> (p.77 para.11)</p> <p>8) <b>Having a care coordinator to educate and support dental care</b>            4 of the sites employed dental care coordinators, staff who worked as either HIV case managers or patients navigators to tend to clients' specific needs. As well as encouraging patients to</p>	<p>2 researchers at the multisite centre checked and "validated" the interpretations of the data. It is not clear whether any of these researchers had done any of the initial coding - and if so how this was checked.</p> <p>Reporting by theme is clearly laid out. Some figures for response numbers would have been useful.</p> <p>Ethics doesn't appear to be mentioned - yet these are potentially vulnerable adults. This does not mean an ethics form was not submitted but it would be useful if some information on the ethical protocol was given.</p> <p><b>Evidence gaps and/or recommendations for future research:</b> NR</p> <p><b>Source of funding:</b> This study was supported by grant #H97HA07519 from the U.S. Department of Health and Human Services, Health Resources and Services</p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>return to care these coordinators played a role in patient education. Participants described how the staff member took the time to explain how to take care of the mouth and teeth. The care coordinator could answer the questions and educate and reinforce messaging shared by other dental staff (p.78 paras 3 and 6)</p> <p><b>9) Maintaining personal oral health and overall oral health</b>  Another motivating factor for coming back into dental care was maintaining oral health and overall general health. For some the desire to maintain their oral health was also linked to their HIV health. (p.78 para.8)</p> <p><b>Conclusions:</b></p> <p>This qualitative study provides in-depth information about the personal values and practices that can influence oral health-care-seeking behaviour among PLWHA. The results highlight a need for strategies that focus on the importance of oral health in the context of HIV health and provide information about and demonstration of appropriate self-care techniques. HIV and dental professionals can also play a critical role by establishing a friendly dental</p>	<p>Administration. This grant is funded through the HIV/AIDS Bureau's Special Projects of National Significance program. (page 80 footnote)</p>

<b>Study Details</b>	<b>Research Parameters</b>	<b>Population and Sample Selection</b>	<b>Outcomes and Methods of Analysis</b>	<b>Notes by Review Team</b>
			setting that fosters trust, support, and education to encourage the adoption of healthy behaviours. (p.80 para.3)	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> A Sbaraini and RW Evans <b>Year:</b> 2008 <b>Citation:</b> Sbaraini, A. and R.W. Evans, Caries risk reduction in patients attending a caries management clinic. Australian Dental Journal, 2008. 53(4): p. 340-8. <b>Country of study:</b> Australia <b>Aim of Study:</b> The hypothesis to be tested was that the high risk of caries in patients receiving treatment in the Caries Management Clinic (CMC)	<b>Source Population(s):</b> Sydney, Australia – but no further information on source population  <b>Setting:</b> a caries management clinic was established in the General Practice Department, at the Westmead Centre for Oral Health (p.341 para.2 and 3) NOTE: Some concerns about whether this is an eligible dental clinic however their website notes that it is: "is the provider of general dental services to the eligible population of the Western Sydney Local Health District." ( <a href="http://www.wslhd.health.nsw.gov.au/Oral-Health">http://www.wslhd.health.nsw.gov.au/Oral-Health</a> )  <b>Location</b> (urban or rural): Urban  <b>Sample characteristics:</b> <b>Age:</b> 18-35 years <b>Sex:</b> NR <b>Sexual orientation:</b> NR <b>Disability:</b> 3 (7%) of patients had a mental health condition (p.344 Table 2) <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> NR <b>Occupation:</b> NR <b>Education:</b> NR <b>Socioeconomic position:</b> NR <b>Social capital:</b> NR  <b>Eligible population</b> (describe how	<b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): During the first oral hygiene coaching session, patients were asked informally whether they would be willing to commence daily toothbrushing and continue to do so during the audit period. Patients who indicated willingness were classified as ready to change (RTC) their oral behaviour or otherwise not ready (p.341 para.11 to p.342 para.1) [NOTE: the RTC group is not an intervention group – both RTC and non RTC received the intervention]  <b>Report how confounding factors were minimised:</b>  <b>Programme/Intervention description:</b> <b>What was delivered:</b> Phase 1: Patients attended a baseline assessment which included measurements for gingival status and caries	<b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):  <b>Outcome name:</b> Status of non-proximal surfaces <b>Outcome definition:</b> Surface status based on different categories: sound; sealed; filled and sound; shiny white spot; opaque white spot; hard-based cavity; soft-based cavity (p.346 Table 5) <b>Outcome measure:</b> Radiography <b>Outcome measure validated:</b> NR – but intra-examiner reliability was tested with kappa	<b>Status of non-proximal surfaces</b>  At baseline, 142 tooth surfaces presented with large opaque white spots but 100 of them were arrested and appeared as shiny white spots after six months. Also, at baseline, there were 228 soft-based cavities of which 137 were temporarily restored with glass ionomer cement (GIC) (Fuji7). None of the GIC restorations presented with recurrent caries after 6 months. All 24 other softbased cavities became hard and black after 6 months following the fluoride	<b>Limitations identified by author:</b>  It was not practical for the Researcher / Operator to be blinded to the clinical findings at the 6-month follow-up and, therefore, to contribute to the reduction in measurement bias. However, the follow-up bitewing radiographs were read without reference to the baseline readings and other clinical diagnostic criteria used were clear-cut. Hence, it is unlikely that the main study findings have been unduly biased. The findings presented here refer only to

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<p>according to the Caries Management System Protocols (CMS). (p.341 para.3)</p> <p><b>Study Design:</b> Before and After Intervention Study</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): High risk male and female patients not limited to but including cigarette smokers, methamphetamine users, and other drug addicted patients, aged 18-35 years were referred to this clinic from other Hospital Departments (but see note above on setting). (p.341 para.5)</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR (there is insufficient information on the source population)</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> NR</p>	<p>status. At the second appointment patients received a dental case presentation which included a dental caries education leaflet. Most importantly they were informed that tooth decay can be stopped, prevented and reversed. Results of the bitewing radiograph analysis were recorded on the pamphlet. In some cases oral hygiene instruction commenced at the baseline clinical examination rather than the second appointment. (p.341 (para10) to 342 (paras2-5).</p> <p>The dentist gave a chairside demonstration of plaque around the gingival margin and oral hygiene instruction and further toothbrush coaching took place in a separate room – the 'oral hygiene bay'. At the first coaching session patients demonstrated how they brushed and the both the dentist and patient reviewed performance against the leaflet – the patient then practised new movements in front of a mirror (p.343 paras</p>	<p>values (p.343 para 11)</p> <p><b>Unit of measurement:</b> Number and percentage of surfaces remaining unchanged from baseline</p> <p><b>Time points measured:</b> Baseline and 6 months</p> <p><b>Outcome name:</b> Status of proximal surfaces</p> <p><b>Outcome definition:</b> Surface status based on different categories: sound; sealed; filled and sound; shiny white spot; opaque white spot; hard-based cavity; soft-based cavity (p.346 Table 6)</p> <p><b>Outcome measure:</b> Radiography</p> <p><b>Outcome</b></p>	<p>varnish treatment. 9 opaque white spots, 1 sealed surface, and 2 sound surfaces at baseline progressed to soft-based cavities after 6 months. (p. 354 (para 1) to 346 (para 1)</p> <p><b>Status of Proximal Surfaces</b></p> <p>At baseline, 683 proximal surfaces were sound, and 95% of them remained sound after 6 months. 3 surfaces became associated with new radiolucencies following baseline, 2 of which had progressed to dentine. 19 sound surfaces, at baseline, belonged to impacted third</p>	<p>patients who returned for dental care; they are not calculated on an 'intention to treat' basis. Therefore, they may be generalised to indicate potential outcomes for patients who are prepared to return for ongoing preventive care. (p.348 para 2)</p> <p><b>Limitations identified by review team:</b> Demographics of source population not reported., therefore cannot determine if eligible population is representative of source population. More than 20% dropped out – should have been dealt with with ITT.</p> <p><b>Evidence gaps:</b> NR</p>

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		<p>1-2)</p> <p>Patients were given a tube of toothpaste and, if needed, chlorofluor gel. Use of these kits was monitored at subsequent visits as patients were requested to bring them in (p.343 para.3)</p> <p>Topical applications of fluoride varnish commenced in Phase 1 and occurred every 2 weeks during phase 2 (p.343 para.4)</p> <p>Phase 2: A monitoring phase of 3 months – oral hygiene sessions were reviewed every 2 weeks at coaching sessions for toothbrushing, (p.343 para.6)</p> <p>Phase 3: 3 months trial – patients were not recalled but advised beforehand to follow the home care instructions – a reward for effective maintenance during trial phase was the promise of replacing pink GIV temporary fillings with tooth coloured restorations. (p.343 para.7)</p>	<p><b>measure validated:</b> NR – but intra-examiner reliability was tested with kappa values (p.343 para.11)</p> <p><b>Unit of measurement:</b> Number and percentage of surfaces remaining unchanged from baseline</p> <p><b>Time points measured:</b> Baseline and 6 months</p> <p><b>Outcome name:</b> Dietary habits</p> <p><b>Outcome definition:</b> Not completely clear but relates to consumption of soft drinks, sugar in tea and coffee and chewing sugar free gum</p> <p><b>Outcome measure:</b> NR</p> <p><b>Outcome</b></p>	<p>molars or teeth that had advanced caries on other surfaces and were later extracted. None of the patients presented with retained roots.(p.346 para.2)</p> <p>At baseline, 683 proximal surfaces were sound, and 95% of them remained sound after 6 months. 3 surfaces became associated with new radiolucencies following baseline, 2 of which had progressed to dentine. Nineteen sound surfaces, at baseline, belonged to impacted third molars or teeth that had advanced caries on other surfaces and were later extracted.</p>	<p><b>Source of funding:</b> Received support from GC (Australia)</p>

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		<p>Phase 4: Follow-up after 6 months – patients were recalled for clinical and radiographic examinations.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Dentist</p> <p><b>To whom:</b> All patients – including RTC and nonRTC</p> <p><b>How delivered:</b> See above</p> <p><b>When/where:</b> Dental clinic</p> <p><b>How often:</b> Varies by phase – see above</p> <p><b>How long for:</b> No detail on length of phase 1 but phase 2-4 covered a 6 months period in total.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 45</b> (referred to CMC during 2005) (p.343 para.12)</p> <p><b>Ready to Change N = 16</b></p> <p><b>Non RTC N= 29</b> (p.244 para.5)</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): RTC patients were more than twice as likely to have fewer sites scored GI-2 (RR=2/.43, 95% CI (1.24, 4.71) p=0.01) (p.344 para.5)</p>	<p><b>measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Appears to vary depending on specific dietary habit</p> <p><b>Time points measured:</b> Baseline and 6 months</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p> <p>Data analysis included the assessment of changes from baseline till the 6-month follow-up of Gingival Index scores, caries clinical findings,</p>	<p>None of the patients presented with retained roots. (p.346 para.2)</p> <p><b>Dietary Habits:</b> In general, the patients were unable to change their dietary habits. It was reported by many that they continued to have up to 3 teaspoons of sugar in coffee or tea, or to keep drinking soft drinks during the day, even bringing soft drinks with them to their dental appointments. (p.346 para.3)</p> <p><b>Conclusion:</b> This study demonstrated that a non-invasive caries management protocol for 6 sessions</p>	

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		<p><b>Study sufficiently powered</b> (power calculations and provide details): It was anticipated that 50 patients would be recruited during the audit period. Based on a significance level of 0.05 a sample of 17 subjects would provide 80% power to detect a 30% reduction in the total Gingival Index score with 95% confidence (2 tailed comparison) (p.341 para.6)</p>	<p>and bitewings radiographs scores. Differences in proportions were tested using the Chi-squared test and Fisher's Exact Test for categorical variables. The data analysis was conducted using both SPSS 15.0 and Epi info 3.2.2software. Diagnostic reliability of bitewing radiolucency assessment was determined by means of the Kappa statistic.(p.343 para.10)</p>	<p>conducted every 2 weeks which combined (1) professional applications of topical fluoride varnish; (2) intensive coaching and monitoring of toothbrushing performance; (3) home care using 5000 ppm strength fluoride toothpaste; and (4) chlorhexidine gel in a group of high caries risk patients enabled these patients to attain and maintain low plaque levels, decrease gingival inflammation, and reduce caries incidence and progression. (p.347 para.2)</p> <p>Within a matter of weeks, factors that have a bearing on the creation of a</p>	

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				<p>favourable oral environment can be activated and result in substantial reductions in risk of caries incidence and progression. This favourable outcome occurred in patients who, prior to their entry to the CMC, were very high risk. It is reasonable to conclude, therefore, that the adoption of this approach to caries management more generally would sharply decrease caries incidence and prevalence in the population. (p.348 para.3)</p>	

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<p><b>Author:</b> Schouten, B. C., Eijkman, M.A.J., and Hoogstraten, J.</p> <p><b>Year:</b> 2003</p> <p><b>Citation:</b> Schouten, B. C., Eijkman, M.A.J., and Hoogstraten, J. (2003) Dentists' and patients' communicative behaviour and their satisfaction with the dental encounter, <i>Community Dental Health</i>, 20, 11-15.</p> <p><b>Country of study:</b> Netherlands</p> <p><b>Aim of Study:</b> To examine the relations between patients' and dentists' communicative behaviour and their satisfaction with the dental encounter. (p11, para.3).</p> <p><b>Study Design:</b> Patients were observed through</p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed) Netherlands (p11, para.4).</p> <p><b>Setting:</b> In the dental examination room and the waiting room of their usual dental practice. (p12, para.3).</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b>  <b>Age:</b> 17-72 years (mean 38.6) (p.12, para.2).  <b>Sex:</b> 49 male, 41 female (p.12, para.2).  <b>Sexual orientation:</b> NR  <b>Disability:</b> NR  <b>Ethnicity:</b> NR  <b>Religion:</b> NR  <b>Place of residence:</b> Netherlands (p.11, para.4).  <b>Occupation:</b> NR  <b>Education:</b> NR</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): [quality assessment] N/A</p> <p><b>Report how confounding factors were minimised:</b> [quality assessment] NR</p> <p><b>Theoretical basis:</b> In line with previous findings it was hypothesised that more active patients are less satisfied with the communicative behaviour of the dentists but more satisfied with their own communicative behaviour than more passive patients. In addition, it was expected that patient satisfaction with consultations was determined more strongly by the communicative behaviour of the dentists than by their own communicative behaviour. Furthermore it was hypothesised that dentists' satisfaction with consultations would be lower than interacting with more active patients than with</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Satisfaction of dentist and patient. (p13, para.2).</p> <p><b>Outcome definition:</b> How satisfied the dentist was with how the consultation with the patient went. A general satisfaction item was also added. (p12, para.4).</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> 5 point Likert-scale, ranging from 1 (totally disagree) to 5 (totally agree). General satisfaction item: 1 (totally unsatisfied) to 5 (totally satisfied). (p12, para.4-5).</p> <p><b>Time points</b></p>	<p>For each outcome report:  <b>Means, SDs, p-values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b> N/A</p> <p><b>Behavioural results:</b></p> <p><b>Intervention group(s): Satisfaction of dentist and patient.</b></p> <p><b>Baseline:</b> N/A</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> The mean score on the dentists' satisfaction scale was 33.9 (SD 5.04, range 5-40). The mean score on items regarding the satisfaction with dentists' own behaviour was slightly, though significant, higher than the mean score on items regarding dentists' satisfaction with the behaviour of the patient. (paired t-test, <math>t=3.9</math>, <math>p&lt;.001</math>). Mean score on the general satisfaction item was 4.4 (SD 0.68,</p>	<p><b>Limitations identified by author:</b>  The nature and size of the study sample limits the generalisability of the results. (p.14, para.6).</p> <p><b>Limitations identified by review team:</b>  The source population is not very well described.</p> <p>It is impossible to say whether the eligible population represents the source population.</p> <p>It is not clear how selection bias minimised as the sample was of patients visiting the dentists for emergency treatment in different locations. It is possible that selection on particular days may have led to bias.</p> <p>The authors only partially explained the</p>

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<p>their dental examination, they were visiting the dental practice for emergency treatment. They were then asked to fill out a questionnaire in the waiting room assessing their satisfaction with the dental encounter as well as a few other questions regarding their visit. The dentists also filled out a short questionnaire assessing their satisfaction after each consultation. (p12, para.3).</p> <p><b>Quality Score (++, +, or -): -</b></p> <p><b>External Validity(++, +, or -): -</b></p>	<p><b>Socioeconomic position: NR</b>  <b>Social capital: NR</b></p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Patients visiting the practice for emergency treatment. (p.12, para.1).</p> <p><b>State if eligible population is considered by the study authors as representative of the source population: NR</b></p> <p><b>Inclusion Criteria:</b> Patients had to be older than 16 and had to be able to speak and read the Dutch language. Had to be visiting the dental practice for emergency treatment. (p.12, para.1).</p> <p><b>Exclusion Criteria:</b></p>	<p>more passive ones. (p.11 para 3)</p> <p><b>What was delivered:</b> In the dental examination room, a video camera was placed in the corner, which recorded the patients from the moment that they entered the room to the moment which they left. After the conclusion of the consultation the patients filled out a questionnaire in the waiting room assessing their satisfaction with the dental encounter as well as several other variables, including their age, gender and education, the reason for their visit, the perceived invasiveness of the treatment, the perceived health of the teeth, if the patient had visited their own dentist in the past twelve months and if they could afford financially the (proposed) dental treatment. (p12, pa. 3).</p> <p>The dentist also filled out a short questionnaire assessing their satisfaction after each consultation.</p>	<p><b>measured:</b> At the end of the consultation. (p12, pa.3).</p> <p><b>Outcome name:</b> Communicative behaviour of dentist and patient. (p13, pa.4).</p> <p><b>Outcome definition:</b> Patient's information-seeking behaviour, patient participation in dental decision-making, whether patients had requested a specific treatment, whether patients had proposed an alternative treatment and who made the ultimate decision.</p> <p>Dentist's communicative behaviour was measure using an adaption of the communication in dental settings scale (CDSS). (p12, pa.6-8).</p> <p><b>Outcome measure:</b> Observation</p> <p><b>Outcome measure validated:</b> Patients' information-seeking behaviour: Mean interrater-reliability was 0.74 (range 0.59-0.95).</p>	<p>range 1-5) and correlation between the total scale score and the general item score was Pearson's <math>r = 0.48</math> (<math>p&lt;.001</math>). (p13, para.2).</p> <p>Total score on the scale assessing patients' satisfaction was 78.6 (<math>SD 9.0</math>, range 19-95). The mean score regarding the satisfaction of patients with the dentists' communicative behaviour was significantly higher than the mean score regarding their satisfaction with their own communicative behaviour (paired t-test, <math>t=6.3</math>, <math>p&lt;.001</math>). (p13, pa.3).</p> <p>Mean score on the general satisfaction item was 4.6 (<math>SD 0.83</math>, range 1-5) and the correlation between the total scale score and the general item score was Pearson's <math>e = 0.51</math>, (<math>p&lt;.001</math>). (p13, pa. 3).</p>	<p>selection of the variables included.</p> <p>The authors do not report how they controlled for confounding variables.</p> <p>It is not reported how well this setting reflects a usual UK dental setting.</p> <p>No baseline measure of the individuals attitudes towards their dental encounter is taken before their consultation.</p> <p>Only the p-values are reported, no confidence intervals are reported.</p> <p>Dental emergencies have been used that might not reflect the typical feelings of someone who visits for a general check-up.</p> <p><b>Evidence gaps: NR</b></p> <p><b>Source of funding:</b></p>

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	<p><b>% of selected individuals agreed to participate:</b> 10 out of the 119 patients approached declined to participation within the study. 6 patients initially agreed but failed to complete the post-appointment questionnaire. 13 recordings were unusable due to their lack of quality. (p.12, para.2).</p> <p><b>Potential sources of bias:</b> NR</p>	<p><b>By whom:</b> Dentist  <b>To whom:</b> Patient  <b>How delivered:</b> Video-recordings and a questionnaire.  <b>When/where:</b> Upon a visit to a dental practice for emergency treatment.  <b>How often:</b> Once  <b>How long for:</b> Once</p> <p><b>Sample size at baseline:</b> N/A</p> <p><b>Total sample N =</b> 90 patients  <b>Intervention group N =</b> N/A  <b>Control Group N =</b> N/A</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): N/A</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): NR</p>	<p>Mean intrarater-reliability was 0.82 (range 0.63-0.94). (p12, para.6).</p> <p>Patient participation in dental decision-making: Mean interrater-reliability was 0.80; range intrarater reliability: 0.84-0.95). (p12, para.7).</p> <p>Whether patients had requested a specific treatment: Mean interrater-reliability was 0.87; range intrarater reliability: 1). (p12, para.7).</p> <p>Whether patients had proposed alternative treatment options: Mean interrater-reliability was 0.96; range intrarater reliability: 0.95). (p12, para.7).</p> <p>Who made the ultimate decision: Mean interrater-reliability was 0.65; range intrarater reliability: 0.63-0.68). (p12, para.7).</p>	<p>Older patients were somewhat more satisfied than younger patients (<math>r=0.27</math>, <math>p&lt;.011</math>). Correlation coefficients between the different scores assessing patients' satisfaction and dentists' satisfaction showed that these 2 variables were unrelated (range 0.003 – 0.09). (p13, para.3).</p> <p><b>Intervention group(s):</b> Communicative behaviour of dentist and patient.  <b>Baseline:</b> N/A  <b>Follow up (all time points):</b> N/A  <b>End point:</b> Mean score on the CDSS was 9.6 (SD3.1, scale range 0 – 21). (p13, para.4).</p> <p>Background variables significantly associated with dentists' communicative behaviour were dentists' age (<math>r=0.21</math>, <math>p=.048</math>) and the number of patients visiting them at least once a year</p>	NR

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			<p>CDSS: Mean interrater-reliability using Cohen's Kappa was 0.62; range intrarater reliability: 0.62-0.73). (p12, para.8).</p> <p><b>Unit of measurement:</b> Patients' information-seeking behaviour: Number and nature of questions asked. (p12, para.6).</p> <p>Patient participation in dental decision-making: Recording whether patients chose to self-diagnose. (p12, para.7).</p> <p>Whether patients had proposed alternative treatment options: Recording any alternatives that were raised. (p12, para.7).</p> <p>Who made the ultimate decision: either the dentist or the patient. (p12, para.7).</p> <p>CDSS: rated at 0 for poor, 1 for acceptable, 2 for acceptable and 3</p>	<p>(r=0.35, p&lt;.001). (p13, para.4).</p> <p>The mean number of questions patients asked per consultation was 3.9 (SD 3.6). (p13, para.5).</p> <p>The majority of patients did attempt to self-diagnose (n=68). However only 8 patients requested a specific treatment and only 3 proposed an alternative treatment to the one offered by the dentist. In about half of the consultations the patient decided to undergo the recommended treatment (n=42), among the other half the decision was made by the dentist (n=45). 2 patients handed handed the decision over to the dentist and in one case no decision was made at the time. (p13, para.6).</p> <p>Because of the low number of patients who</p>	

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			<p>for good. (p12, para.8).</p> <p><b>Time points measured:</b> At the end of the consultation. (p12, para.3).</p> <p><b>Outcome name:</b> Relationship between communicative behaviour and satisfaction (p14, para.1).</p> <p><b>Outcome definition:</b> Relationship between communicative behaviour and satisfaction (p14, para.1).</p> <p><b>Outcome measure:</b> Questionnaire and observations from the consultation (p14, para.1).</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Questionnaire responses and observations made during the consultations.</p> <p><b>Time points measured:</b> At the end</p>	<p>requested a specific treatment or proposed alternative treatment options no additional analyses could be made. (p13, para.6).</p> <p><b>Intervention group(s):</b> Relationship between communicative behaviour and satisfaction</p> <p><b>Baseline:</b> N/A</p> <p><b>Follow up (all time points):</b> N/A</p> <p><b>End point:</b> Patients who asked more questions during their visit to the dentist were slightly, though not significantly, more satisfied with the communicative behaviour of the dentist than patients who asked less questions (<math>t=1.8</math>, <math>p=.07</math>). No difference in satisfaction was observed in relation to the types of questions asked. No difference in dentist satisfaction was observed either related to how many questions were asked by the</p>	

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			<p>of the consultation. (p12, para.3).</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): In order to investigate whether patients' and dentists' satisfaction was related to patients' and dentists' communicative behaviour correlation coefficients were calculated and linear regression analyses were performed. T-tests were also performed. (p.12-13)</p>	<p>patient. (p14, para. 1).</p> <p>Whether patients did or did not attempt to self-diagnose made no difference to their satisfaction with their own or the dentists' communicative behaviour. However dentists' satisfaction with their own and patients' communicative behaviour was higher when interacting with patients who did attempt to self-diagnose, compared to those who did not (<math>t=2.1</math>, <math>p=.04</math>; <math>t=2.7</math>, <math>p=.01</math> respectively). (p14, para.2).</p> <p>Patients who made the decisions about the treatments themselves were significantly more satisfied with their communicative behaviour than patients who did not decide themselves (<math>t=3.6</math>, <math>p&lt;.001</math>). The satisfaction of the dentist was not influence by whether or</p>	

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				<p>not patients made the decision themselves. (p14, para.3).</p> <p>Patients' satisfaction with their own and dentists communicative behaviour was positively related to the dentists' communicative behaviour (<math>r=0.32</math>, <math>p&lt;.002</math>; <math>r=0.34</math>, <math>p&lt;.001</math> respectively). (p14, para.4).</p> <p>To determine the relative influence of dentists' and patients' behaviour 4 linear regression analyses were performed, with the following 4 dependent variables: patients' satisfaction with their own communicative behaviour, patients' satisfaction with the communicative behaviour of the dentist, dentists' satisfaction with patients' communicative behaviour, and dentists' satisfaction with their own communicative</p>	

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				<p>behaviour. (p14, para.5). (Table 3 p.14) The variance in patients' satisfaction with both their own and the dentists' communicative behaviour was mainly explained by dentists' communicative behaviour (<math>R^2=0.19</math>, <math>p&lt;.05</math>). None of the variables studied explained any variance in dentists' satisfaction, except for the variable 'self-diagnosis' but then only a small amount (dentist satisfaction with own behaviour: <math>R^2=0.05</math>, <math>p=.032</math>; dentist satisfaction with patients' behaviour: <math>R^2=0.08</math>, <math>p=.006</math>). (p14, para.5).</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>10 out of the 119 patients approached</p>	

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				<p>declined to participation within the study. 6 patients initially agreed but failed to complete the post-appointment questionnaire. 13 recordings were unusable due to their lack of quality. (p.12, para.2).</p> <p><b>Conclusion:</b> The results show that the patients as well as dentists are very satisfied with dental emergency consultations. (p.14, para.6).</p> <p>High patient satisfaction in particular among older patients is consistent with findings from other studies. (p.14, para.6).</p> <p>However patients in this study did not engage in a lot of information-seeking behaviour. Besides most patients did not ask the dentist for a specific treatment, nor did they propose alternative treatment</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>options to the one offered by the dentist. (p.14, para.6).</p> <p>Active patients were not more satisfied with their communicative behaviour nor were less satisfied with the dentists' communicative behaviour than passive patients. Although patients who made the decision about the treatment themselves were more satisfied with their communicative behaviour than patients who let the dentist decide. (p.14, para.7).</p> <p>Results from a regression analysis showed that patients' satisfaction with emergency consultations is determined by the greater part by the communicative behaviour of dentists. However scores on the CDSS showed that dentists' communicative behaviour towards dental emergency</p>	

<b>Study details</b>	<b>Population and setting</b>	<b>Method of allocation to intervention/control</b>	<b>Outcome definitions and method of analysis</b>	<b>Results</b>	<b>Notes by review team</b>
				patients' is rather neutral. (p14-15 para.8).	

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
<p><b>Author:</b> A. G. Threlfall, C. M. Hunt, K. M. Milsom, M. Tickle and A. S. Blinkhorn</p> <p><b>Year:</b> 2007</p> <p><b>Citation:</b>  <b>Paper One:</b> Threlfall, A.G., et al., Exploring the content of the advice provided by general dental practitioners to help prevent caries in young children. British Dental Journal, 2007. 202(3): p. E9; discussion 148-9. <b>(Content)</b></p> <p><b>Paper Two:</b> Threlfall, A.G., et al., Exploring factors that influence general dental practitioners when providing advice to help prevent caries in children. British Dental Journal, 2007. 202(4): p. E10; discussion</p>	<p><b>Study design:</b> Qualitative study using semi-structured interviews (abstract)</p> <p><b>Research aims, objectives, and questions:</b> To increase understanding about the care GDPs provide for young children and explore the nature of the advice and preventive care they offer (Paper One: p.1 para.2) To increase understanding about how to and to whom GDPs provide preventive advice to reduce caries in young children (Paper Two, p.1, para.1).</p> <p><b>Theoretical approach [grounded theory, IPA etc]:</b> Analysis of the content was undertaken using a grounded theory approach to identify the key concepts that emerged (Paper One) and to identify factors that might influence the provision of preventive advice (Paper Two). A grounded theory approach is a qualitative research method that uses a systematic approach in order to inductively derive theory about a phenomenon. The theory derived is both</p>	<p><b>Population the sample was recruited from:</b> GDPs practising in Lancashire, Cheshire and Greater Manchester. (Paper One: p.1 para.3)</p> <p><b>How sample was recruited:</b> The study population was drawn from GDPs practising in Lancashire, Cheshire, and Greater Manchester in 2003. Dentists were selected at random from the General Dental Council's register and sent a letter inviting them to participate. This process continued until approximately 100 GDPs had agreed to participate. The dentists were selected at random to avoid any bias associated with a convenience sample and all the dentists who replied and wanted to participate were entered into the study. The sample size was not determined by statistical considerations but aimed to be sufficiently large and varied to capture the full range of views and opinions of GDPs working within the region. (p.1 para.3)</p>	<p><b>Brief description of method and process of analysis [including analytic and data collection technique]:</b></p> <p><b>Paper One:</b>  In brief, the transcripts were analysed without pre-conceptions about the expected content and themes emerged by using a constant comparative method [this follows the grounded theory approach described under the Research Parameters column]. Analysis continued until saturation of concepts was reached, that being when no new concepts can be identified. Here findings relating to the GDPs' views about prevention and the content of the advice provided are presented. The qualitative analysis was undertaken by CH and AT who are health service researchers and are not dentists. (p.2 para 2)</p> <p><b>Paper Two:</b>  In this study the data from the 93 transcribed GDP interviews were analysed using a grounded theory approach to identify factors that might influence the provision of preventive advice. The constant comparison technique was used to analyse the transcripts. The method used involved initially coding data and constantly comparing new data, firstly with new incidents in the data and then with</p>	<p><b>Limitations identified by author:</b> NR</p> <p><b>Limitations identified by review team:</b>  The qualitative approach did provide considerable depth which may not have been captured in a quantitative-only study. However, given the size of the sample, it would have been useful to have included some quantitative questions and analysis. For example - it would have been useful if the number of dentists prescribing fluoride supplements or advising against fizzy drinks was reported.</p> <p>Information was not provided on how data was stored and record keeping made systematic.</p> <p>No information is provided on how the research was presented to the participants and the relationship between the participants and the researchers does not appear to have been considered.</p> <p>Information on participant</p>

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<p>216-7. <i>(Different senders)</i></p> <p><b>Country of study:</b> England</p> <p><b>Quality Score (++, +, or -) +</b></p> <p><b>State how data were collected:</b> <b>What method(s):</b> Each participant was interviewed separately. During the interviews each dentist was encouraged to speak freely about the care they provide to the primary dentition. The interviews were semi-structured around a set of themes that were agreed following group work with a panel of experienced GPs and specialists in paediatric dentistry. One of these themes was prevention of caries in the primary dentition. All interviews were tape recorded, numbered for anonymity, and transcribed verbatim. (Paper One: p.2 para.1) <b>By whom:</b> One of 3 trained interviewers who were not dentists. (Paper One: p.2 para.1) <b>What setting:</b> The dentists'</p>	<p>generated from the data collected and also provisionally tested by that data. The purpose is to build a theory that is faithful to the data collected and illuminates the area under study (p.2 para.2).</p> <p><b>What method(s):</b> Each participant was interviewed separately. During the interviews each dentist was encouraged to speak freely about the care they provide to the primary dentition. The interviews were semi-structured around a set of themes that were agreed following group work with a panel of experienced GPs and specialists in paediatric dentistry. One of these themes was prevention of caries in the primary dentition. All interviews were tape recorded, numbered for anonymity, and transcribed verbatim. (Paper One: p.2 para.1) <b>By whom:</b> One of 3 trained interviewers who were not dentists. (Paper One: p.2 para.1) <b>What setting:</b> The dentists'</p>	<p><b>How many participants recruited:</b> 311 invited to participate. 96 initially agreed. 2 withdrew from the study due to time constraints in practice and one because of illness. Therefore 93 dentists were interviewed (p.2 para 3)</p> <p><b>Sample characteristics:</b> <b>Age:</b> NR <b>Sex:</b> Males=70; Female= 23 (p.2 para 3) <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> NR <b>Occupation:</b> NR <b>Education:</b> NR <b>Socioeconomic position:</b> NR <b>Social capital:</b> NR <b>Inclusion criteria:</b> NR <b>Exclusion criteria:</b> NR</p>	<p>codes and categories. This was continued until very few or no new categories were emerging from the transcripts. Data analysis was iterative, new emerging codes were used to examine existing codes in more depth. The concepts and categories that emerged from the data were formed into themes, which were the key factors that emerged from the transcripts as influencing the provision of preventive advice. The themes were considered together and discussed in an attempt to identify theory that might connect them.</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>Paper One:</b></p> <p>[<b>Paper One: Note on paragraph references:</b> New text is only treated as in a separate paragraph to previous text where there is a space between them]</p> <p><b>Diet v brushing</b></p> <p>Most dentists believed that diet was the most important factor when providing preventive advice to children.(p.2 para.5)</p> <p><i>'Although tooth brushing is important, in the first years of life I would stress that diet control is more important. I'm not'</i></p>	<p>characteristics is limited. It would have been useful to have more socio-economic context on the areas the dentists operate in and to see whether there are any differences in advice provided.</p> <p>No triangulation appears to have taken place and only one method was used. However given the findings presented are quite general and 3 different researcher conducted interviews it is unlikely that there will be major issues with reliability.</p> <p>Given the size of the sample the paper would have benefited from some discussion of differences between dentists in different areas serving different communities. Also it would be useful if some figures were provided for some of the responses - again it seems peculiar that they aren't given that the study had such a large sample for a qualitative piece of work.</p> <p>While 2 researchers were involved in the analysis it is not clear how differences</p>

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	<p>homes or places of work. (Paper One: p.2 para.1)</p> <p><b>When:</b> Conducted between March 2003 and September 2003. (Paper One: p.2 para.1)</p>		<p><i>saying don't brush the teeth but control the sugar in the diet more so than being over zealous about tooth brushing.'</i> (1000, male dentist, 19 years experience.) (p.2 para.6)</p> <p>However some dentists focussed strongly on regular toothbrushing rather than diet, believing it was more realistic to change brushing than eating behaviour. (p.2 para.8)</p> <p><b>Content of dietary advice</b></p> <p>In general, the diet advice provided was about reducing the intake of sugary foods and drinks, with many stressing that frequency of sugar consumption was the most important message to get across. (p.2 para.10)</p> <p>Some dentists believed in providing diet advice that they thought realistic and suggested approaches to reduce the frequency and regulate the periods of sugar consumption. These included replacing sweets with savoury alternatives, fizzy drinks with milk, flavoured water, or weak diluted fruit juices and eating sweets at mealtimes or in one sitting. (p.2 para.12)</p> <p><i>'Stop sugary drinks before you go to bed at night. I recognised that the child wasn't going to stop eating sugar and I said if you could limit it to ideally once a</i></p>	<p>between them were resolved.</p> <p>The findings are clearly laid out and a sufficient number of extracts are provided to illuminate them. However as mentioned it would have been useful if some response numbers had been provided as opposed to just relying on terms such as "most" and "some".</p> <p>The focus is very much on the content of the message and not how the message is delivered.</p> <p>The conclusions clearly enhance the understanding of this research area. However the conclusion does not clearly set out the limitations of the study. Also the authors claim that they have "no reasons to believe" that the findings may not apply to other areas of the UK, whereas it would have been better to suggest additional research to explore if there are any regional differences (which could for example result from the practices of different health authorities).</p>

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			<p><i>week and eat all the sweets in one go...</i> (1013, male dentist, 6 years experience.) (p.2 para.14)</p> <p>Drinks emerged as a key part of many dentists advice on prevents. For many dentists the dangers of fizzy drinks were singled out. (p.2 para.15)</p> <p><b>Advice on reducing fizzy drinks</b> Reasons given for not drinking fizzy drinks varied; some stressed the importance of acid erosion whilst others stressed the risk of decay from high sugar content. (p.3 para.1)</p> <p><b>Advice on extrinsic sugars</b> This was another source of variation. Some dentists were especially concerned about sugars in savoury foodstuffs and foodstuffs commonly considered as healthy, like yoghurt, but most did not mention hidden sugars. (p.3 para.3)</p> <p><b>Fluoride supplements</b> Approximately half of the dentists indicated that they currently prescribe fluoride supplements to their child patients. Some dentists prescribing fluoride supplements did so to most of their child patients whilst others only prescribed to specific patients, for example those who had not responded to dietary and oral hygiene advice. (p.3 para.5)</p>	<p>Ethical issues are not mentioned</p> <p><b>Evidence gaps and/or recommendations for future research:</b> There is a need to develop and test a widely accepted, evidenced-based dental health advice and fluoride use programme with clear and concise messages that primary care dentists can deliver in practice. Such a development would discourage a piecemeal, subjective approach to prevention and instead ensure the delivery of an appropriate set of messages that could be delivered in a consistent and quality-assured manner. The development of Clinical Care Pathways within the new dental contract offer an opportunity to introduce an evidenced-based priority list of specific preventive messages that can be adopted by NHS dentists. (Paper One: p.4 para.3)</p> <p>The arrival of the new dental contract provides an opportunity for change by</p>

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			<p>Reasons for not prescribing fluoride included fear of fluorosis and some had stopped because of this as well as difficulties with compliance. (p.3 para.8)</p> <p><i>'We used to have a policy of giving fluoride supplements but I was scared that people would get fluorosis and such things so we went off it. I never saw any. Rumours.'</i> (118, male dentist, 14 years experience.) (p.3 para.9)</p> <p>NOTE: Dentists also discussed water fluoridation in the interview but this did not concern oral health messages as such so these findings have not been included.</p> <p><b>Conclusions:</b> The dentists in this study were aware of the basic principles of preventive dentistry, but their care and advice varied in content and emphasis. The majority felt that diet control should be the cornerstone of their preventive advice, but others were more concerned to stimulate regular tooth brushing habits. Only half of the dentists reported prescribing fluoride supplement. (p.3 para.15)</p> <p>The focus of most dietary advice was the consumption of sugar. The consumption of fizzy drinks was singled out as very important by some but not all dentists, and advice about these</p>	<p>placing prevention at the heart of dental care and allowing dentists to spend more time with children. This opportunity will be lost unless efforts are made to both improve the content and delivery of preventive advice and to uncover simple interventions that might result in improving usage of fluoride toothpaste and changing children's diets. These interventions will need to be developed in partnership with patients if the prescriptive mindset of GPs towards prevention is to be challenged. Research can be undertaken to test innovative approaches and identify better ways of delivering preventive care. Training can be provided, both as part of the undergraduate curriculum and as part of continuing professional development, to improve the delivery of preventive care by promoting a better understanding about counselling skills and educative techniques. In addition, individual GPs need to reflect on their own delivery of preventive care to</p>

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			<p>drinks also varied. (p.3 paras 16-17)</p> <p>A surprising finding was the degree of variation amongst the GPs in their attitude towards fluoride and their use of fluoride supplements. Whilst some use these supplements widely, others adopt a targeted approach, yet others prescribed them on demand and some did not prescribe them because they are frightened of the possible side effects. (p.3 para.18)</p> <p>The findings demonstrate that these GPs do not deliver caries preventive messages in a similar and consistent manner. Whilst there is an acceptance amongst them that the key messages of oral hygiene and sugar control need to form the basis of practice-based caries prevention, there is no unified approach to the emphasis that should be placed on the practical delivery of information to children and their carers. If the findings from this large group of GPs are transferable to GPs practising in other regions of the UK, and we have no reasons to believe otherwise, then UK dentists are selectively delivering a range of preventive messages and care based in part on their own experiences and possible prejudices. Perhaps the inconsistency of approach toward caries prevention in young children among GPs, especially in their use of fluoride, offers a partial explanation for the lack of recent progress in reducing</p>	<p>identify ways in which it might be improved. (Paper Two: p.4, para.4)</p> <p><b>Source of funding:</b> NR</p>

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			<p>caries in the primary dentition of UK children. (p.4 para.2).</p> <p><b>Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>Paper Two:</b> (p.2-3)</p> <p>Patient factors:</p> <ul style="list-style-type: none"> <li>- Gender or ethnicity was not important to GPs when giving advice</li> <li>- Age influenced the delivery of advice but not the likelihood of providing advice.</li> <li>- Attitude and behaviour of a child was important for making treatment decisions but not a major factor when providing advice.</li> <li>- The amount of caries the child had was crucial to treatment decisions and the advice provided.</li> <li>- Children with caries were questioned about diet and oral hygiene behaviour but those without tended not to be questioned.</li> </ul> <p><i>“If I see a child and oral hygiene is good, I would say very little about what they are doing because whatever they are doing they are doing alright”</i></p> <ul style="list-style-type: none"> <li>- Children presenting with caries on more than one occasion were either given similar message again or given fluoride tablets or fluoride</li> </ul>	

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			<p>varnish.</p> <ul style="list-style-type: none"> <li>- In some cases if dentists felt advice was not observed they became unmotivated about providing advice: <i>'If I give tablets it's usually for a patient who keeps coming back and back, and you are getting nowhere with the diet advice and the oral hygiene advice...then I am more likely to give fluoride tablets at that stage. But I wouldn't do initially.'</i></li> </ul> <p>Parent factors:</p> <ul style="list-style-type: none"> <li>- The GPs' perception of the accompanying parent, especially their beliefs about parental attitude and motivation, were crucial to the provision of preventive advice: in general if dentists believed parents were well motivated they gave more advice.</li> <li>- A link between social class and parental motivation was also mentioned:</li> <li>- <i>"Some mothers, particularly middle class will come in and talk at great length about fluoride..."</i></li> <li>- The dentist's belief that the advice they provided was acted upon by some parents was an important factor in ensuring that they continued to provide advice.</li> <li>- Dentists reported that many parents were ignorant about the causes of tooth decay and they often tried to make sure that parents understood</li> </ul>	

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			<p>the causes of decay and the harmful effects of sugar.</p> <p>External factors:</p> <ul style="list-style-type: none"> <li>- Practices with a hygienist tended to have an increased emphasis on dietary advice and oral hygiene instruction: <i>“All children to see a hygienist on a regular basis...because they do the best prevention care”</i></li> <li>- Many respondents referred to the problem of time restrictions and many linked this problem to the fee structure.</li> <li>- An overarching theory emerged from the transcripts; GDPs see themselves in the role of health educators when considering prevention.</li> <li>- There was an almost universal belief that caries could be prevented if parents listened to and understood the diet advice and oral hygiene instruction provided.</li> <li>- The majority of dentists relied on verbal advice in the form of a short educative talk and some also handed out leaflets.</li> <li>- Although dentists saw themselves as health educators, there was little evidence that they used techniques such as visual aids to increase the impact of their preventive advice.</li> </ul> <p><b>Conclusions</b> (p.4)</p>	

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			<p>Preventive advice provided in the dental practice is given in an <i>ad hoc</i> way with no formal targeting of patients. Most GPs tend to deliver preventive advice in a similar manner, a short educative talk with no props or additional materials. In addition, there was no planned reinforcement of advice. Greater use of visual aids, providing materials for parents to take home, and greater emphasis on partnership might help improve the impact of GPs' advice.</p>	

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<p><b>Author:</b> Vachirarojpisan, T., Shinda, K., Kawaguchi, Y</p> <p><b>Year:</b> 2005</p> <p><b>Citation:</b> Vachirarojpisan, T., Shinda, K., and Y. Kawaguchi. The process and outcome of a programme for preventing early childhood caries in Thailand. Community Dental Health (2005). 22, 253-259</p> <p><b>Country of study:</b> Thailand</p> <p><b>Aim of Study:</b> the aim of this preliminary study was to evaluate the process of the participatory-DHE programme and the effectiveness of this intervention on reported changes in</p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed) <b>NR</b></p> <p><b>Setting:</b> Health centres in the rural district of Suphanburi Province, Thailand</p> <p><b>Location</b> (urban or rural): Rural</p> <p><b>Sample characteristics:</b> <b>Age:</b> Children: 6 – 19 months Children's average age: Intervention= 12.09 (presumably months?); Control= 12.24 Mothers/ caregivers average age: Intervention= 30.28 (presumably years); Control= 29.70 <b>Sex:</b> Intervention group: Male= 120 (56.3%); Female= 93 (43.7%); Control group: Male= 96</p>	<p><b>Method of allocation</b> (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): randomised by health centres</p> <p><b>Report how confounding factors were minimised:</b> There were no significant differences at baseline. Contamination was minimised as separate clinics were used for the control and intervention groups.</p> <p><b>Programme/Intervention description:</b> <b>What was delivered:</b> Small group discussion with 6-8 mothers/caregivers on their children's oral health and causes and prevention of ECC three times, at 3 monthly intervals, change from didactic formal lecture approach to opportunity to choose the ECC preventive methods they believed suitable for their children.</p> <p>The series of discussion topics depended on the points of interest that arose within each group. The discussion groups</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Healthcare centre staff impact evaluation</p> <p><b>Outcome definition:</b> Questionnaire survey to evaluate the programme's impact on health centre staff and whether they had a better knowledge and attitude toward the ECC problem</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Questionnaire response</p> <p><b>Time points measured:</b> New</p> <p><b>Outcome name:</b> Effects of mothers/caregivers</p>	<p>For each outcome report</p> <p><b>Means, SDs, p- values, CIs, Effect sizes, SEs</b></p> <p><b>Oral health (clinical) results:</b></p> <p><b>Children's dental cavitated carious increment:</b></p> <p>Mean scores (with standard deviations in brackets)</p> <p>Non-cavitated carious lesions: Intervention: Baseline: 1.38 (2.12) 1 year follow-up: 3.98 (3.08)</p> <p>Control: Baseline: 1.47 (2.14) 1 year follow-up: 4.04 (2.99)</p> <p>Cavitated carious lesions: Intervention: Baseline: 0.36 (1.06) 1 year follow-up: 3.82</p>	<p><b>Limitations identified by author:</b></p> <p>The ECC problem in Thailand remains a critical and sever problem, therefore this single intervention in the short term is not seen as sufficient to prevent the development of ECC</p> <p>Health centre staff had a different experience and ability to moderate group discussions</p> <p>Some mothers/caregivers did not attend all three sessions and sent a representative to join the discussion</p> <p>Potential of cross- contamination of results between subjects who lived in the adjacent household but did not attend the same health centre.</p>

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<p>the oral health behaviour of children and the impact outcome on cavitated carious increment over a one-year period.</p> <p><b>Study Design:</b> One year intervention programme. Subjects divided into 2 groups by randomising the health centre they attended. Small group discussion with active involvement was provided in the intervention group while the routine national teaching DHE programme was provided in the control group. Children's caries status and oral health behaviour evaluated and compared between the 2 groups at the end of the study. "Observational</p>	<p>(50.3%); Female= 95 (49.7%)</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> Thai</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> Rural Area</p> <p><b>Occupation:</b> Mothers/ caregivers: House wife (did not work): Intervention group= 130 (61.0%); Control group= 100 (52.4%)</p> <p>Working: Intervention= 83 (39.0%); Control= 91 (47.6%)</p> <p><b>Education:</b> Mothers/ caregivers: Primary school or less: Intervention group= 159 (74.6%); Control group= 143 (74.9%)</p> <p>Secondary school or more: Intervention group= 54 (25.4%); Control group= 48 (25.1%)</p> <p><b>Socioeconomic position:</b> Family income per month: Below Thai average:</p>	<p>took about 40-60 minutes.</p> <p>Free toothbrushes and fluoride toothpaste were distributed to mothers/caregivers after each session</p> <p><b>Theoretical basis:</b> NR</p> <p><b>By whom:</b> Dentists and staff from health centres</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> Small group discussions</p> <p><b>When/where:</b> health centres in rural locations</p> <p><b>How often:</b> Baseline, 3 monthly in Feb, May, Aug and Nov.</p> <p><b>How long for:</b> 12 month period</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Clinical examination and questionnaire interviews at baseline and one year later.</p> <p>Routine DHE prevention programme: 10 health centres provided DHE using the national DHE programme. This programme consisted of didactic teaching about ECC prevention methods and providing free toothbrushes. This activity was conducted at the same time as the vaccination programme for</p>	<p>knowledge on ECC</p> <p><b>Outcome definition:</b> Mothers/caregivers knowledge of ECC</p> <p><b>Outcome measure:</b> Questionnaire</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Percentage of correct answers</p> <p><b>Time points measured:</b> End</p> <p><b>Outcome name:</b> Childrens dental cavitated carious increment</p> <p><b>Outcome definition:</b> Dental caries measured to show the presence of noncavitated and cavitated decayed teeth using the portable dental light with a visual and non-tactile technique (Kaste et al 1999). Examiners attended 2 day calibration exercise.</p> <p><b>Outcome measure:</b> Dental caries</p>	<p>(3.65)</p> <p>Control: Baseline: 0.51 (1.38) 1 year follow-up: 3.74 (3.93)</p> <p>ECC (non-cavitated and cavitated carious lesion):</p> <p>Intervention: Baseline: 1.73 (2.60) 1 year follow-up: 7.80 (4.99)</p> <p>Control: Baseline: 1.97 (2.76) 1 year follow-up: 7.78 (5.22)</p> <p>Mean cavitated carious increment: Intervention: 3.46 (3.36) Control: 7.78 (5.22)</p> <p>There were no statistical differences in non-cavitated and cavitated carious lesions between both groups at the baseline and one year follow up – Table 3 p.257</p> <p>The children in both</p>	<p><b>Limitations identified by review team:</b></p> <p>The source population is only partially described.</p> <p>The eligible population or area population is only partially representative of the source population or area.</p> <p>Participants were from Thailand therefore they do not fully represent the eligible population or area.</p> <p>Allocation to the intervention and control groups was done so via randomisation by the health centres.</p> <p>Interventions and comparisons were only partially described.</p> <p>Allocation to condition was completed by randomisation by whole session.</p>

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<p>method" used to evaluate the process of group activities in the intervention group. Health centre staff's knowledge of ECC problem evaluated by questionnaire at end of study.</p> <p><b>Quality Score (++, +, or -):</b> ++</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>Intervention= 115 (54.0%); Control= 107 (56.0%); Over Thai average: Intervention= 98 (46.0%); Control= 84 (44.0%)</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Voluntary entry to the study</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> +</p> <p><b>Inclusion Criteria:</b> Mothers/caregivers of Children born between March 2000 and April 2001 aged 6-19 months old</p> <p><b>Exclusion Criteria:</b> NR</p>	<p>children at the age of 9 and 18 months.</p> <p><b>By whom:</b> Dentists and staff from health centres</p> <p><b>To whom:</b> Participants</p> <p><b>How delivered:</b> Didactic teaching about ECC prevention methods plus free toothbrushes.</p> <p><b>When/where:</b> health centres in rural locations</p> <p><b>How often:</b> baseline, then at 9 and 18 months old.</p> <p><b>How long for:</b> 12 month period</p> <p><b>Sample size at baseline:</b> NR</p> <p><b>Total sample N =</b> 520  <b>Intervention group N =</b> 270  <b>Control Group N =</b> 250</p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): There were no statistically significant differences in any characteristics of mothers/caregivers and children who belonged to the intervention and control groups at the outset.</p> <p><b>Study sufficiently powered</b> (power calculations and provide details): NR</p>	<p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Kappa Score</p> <p><b>Time points measured:</b> Beginning and End</p> <p><b>Outcome name:</b> Stated changes in Oral health behaviour</p> <p><b>Outcome definition:</b> The percentages of children according to oral health behaviour</p> <p><b>Outcome measure:</b> percentage of children according to oral health behaviour</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> Percentage</p> <p><b>Time points measured:</b> Beginning and End</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were</p>	<p>intervention and control groups had the same order of magnitude of increase in cavitated carious lesions during the one year period (Table 4 p.257). The proportion of children with cavitated carious increment was 74.2% and 68.1% in the intervention and control groups, respectively.</p> <p><b>Behavioural results:</b></p> <p><b>Healthcare centre staff impact evaluation</b></p> <p>About half of health centre staff reported a difficulty in finding appointment times for the groups and how to lead and moderate the groups.</p> <p>16 of 17 of health centre staff stated that they would like to extend the topics of discussion for their clients in this small group format, to other</p>	<p>It was not recorded whether the exposure to the intervention or control group was adequate.</p> <p>In the intervention group they also received free fluoride toothpaste alongside the free toothbrush.</p> <p>The intervention was conducted in Thailand and is therefore does not fully reflect the usual UK practice. It was also a participatory programme so again it does not fully reflect usual UK practice.</p> <p>It was not recorded whether the outcome measures were reliable.</p> <p>The outcome measures were not included within the research.</p> <p>Some of follow up times were not the</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p><b>% of selected individuals agreed to participate:</b> 57 subjects (21.1%) (Intervention group), 59 subjects (23.6%) (Control group) dropped out mainly due to mothers/caregivers moving out of the area or refused to continue in the programme.</p> <p><b>Potential sources of bias:</b> NR</p>		<p>made for any baseline differences in important confounders): Chi-Square was used to compare results for individual components of oral health behaviour. The T-Test was used to compare results for dental cavitated carious increment.</p>	<p>areas of general health of children.</p> <p><b>Effects of mothers/caregivers knowledge on ECC</b></p> <p>Almost 100% of mothers/caregivers in both groups were able to identify that “candy” and “no brushing behaviour” were the causes of ECC.</p> <p>Stated changes in Oral health behaviour</p> <p>In the intervention group the proportions of the children brushing their teeth using fluoride toothpaste and using a proper amount of toothpaste were higher at one-year follow up than in the control group (<math>p&lt;0.001</math>). Other oral health behaviours such as consumptions of sweet food between meals, night time bottle-feeding and falling asleep with a bottle also showed</p>	<p>same in each condition.</p> <p>ITT was not recorded.</p> <p>Power was not recorded and neither were the estimates of effect size.</p> <p>It was not reported whether the analytical methods were appropriate.</p> <p>Some p values were given when considering the precision of the intervention effects that were given.</p> <p>The data from this study has only partial internal validity.</p> <p>The data from this study has only partial external validity.</p> <p><b>Evidence gaps:</b> NR</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>similar results in both groups.</p> <p><b>Oral health behaviour:</b></p> <p>ns= not significant</p> <p>Any tooth brushing: Intervention: Baseline: 18.3% 1 year: 93.0%</p> <p>Control: Baseline: 17.3% 1 year: 73.8%</p> <p>Result of chi-square: Baseline: ns 1 year: 0.001</p> <p>Parent brush their child teeth: Baseline: 13.6% 1 year: 76.0%</p> <p>Control: Baseline: 15.2% 1 year: 59.7%</p> <p>Result of chi-square: Baseline: ns 1 year: 0.001</p> <p>Brushing twice a day: Baseline: NR</p>	

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				<p>1 year: 41.8%</p> <p>Control: Baseline: <b>NR</b> 1 year: 26.7%</p> <p>Result of chi-square: Baseline: <b>NR</b> 1 year: 0.001</p> <p>Fluoride toothpaste use: Baseline: 8.9% 1 year: 97.3%</p> <p>Control: Baseline: 7.3% 1 year: 58.1%</p> <p>Result of chi-square: Baseline: ns 1 year: 0.001</p> <p>Proper amount of toothpaste: Baseline: <b>NR</b> 1 year: 73.2%</p> <p>Control: Baseline: <b>NR</b> 1 year: 38.2%</p> <p>Result of chi-square: Baseline: <b>NR</b> 1 year: 0.001</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>Falling asleep with bottle: Baseline: 34.3% 1 year: 27.7%</p> <p>Control: Baseline: 37.2% 1 year: 24.1%</p> <p>Result of chi-square: Baseline: ns 1 year: ns</p> <p>Night time feeding: Baseline: 43.7% 1 year: 40.4%</p> <p>Control: Baseline: 44.0% 1 year: 35.1%</p> <p>Result of chi-square: Baseline: ns 1 year: ns</p> <p>Sweet food dietary between meal: Baseline: 88.3% 1 year: 91.5%</p> <p>Control: Baseline: 92.1% 1 year: 90.6%</p> <p>Result of chi-square: Baseline: ns</p>	

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				<p>1 year: ns</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control) 57 subjects (21.1%) (Intervention group), 59 subjects (23.6%) (Control group) dropped out mainly due to mothers/caregivers moving out of the area or refused to continue in the programme.</p> <p><b>Conclusion:</b> Results revealed the effectiveness of a participatory DHE approach to increase tooth brushing and fluoride toothpaste behaviour as preferred individual/collective choices for preventing ECC.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<b>Author:</b> Wang, S.J et al <b>Year:</b> 2010 <b>Citation:</b> Wang, S.J., Briskie, D., Hu, J.C.C., Majewski, R., Inglehart, M.R., and P. Habil. Illustrated information for Parent Education: Parent and Patient Responses. Pediatric Dentistry. 2010; 32:295-303 <b>Country of study:</b> USA <b>Aim of Study:</b> The purpose of this study was to explore the effect of using illustrations, when educating parents about their child's upcoming operative appointment, on parents' and child patients' responses to the treatment. The studies objectives were to analyse	<b>Source Population(s):</b> Parents of 4 to 10 year old paediatric dental patients (at Pediatric Dental clinic at Mott Children's Health Center, Flint, Michigan, USA) who needed operative treatments. <b>Setting:</b> Pediatric Dental clinic at Mott Children's Health Center, Flint, Michigan, USA <b>Location (urban or rural):</b> NR <b>Sample characteristics:</b> <b>Age:</b> Children were between 4 and 10 years. Average age = 6.7 years old. Adults: 164 mothers, 18 fathers, 1 grandfather, 2 foster parents, 1	<b>Method of allocation (describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported):</b> The parents were randomly assigned with a random number table to 1 of 4 conditions for the treatment plan consultation. <b>Report how confounding factors were minimised:</b> Analysis was undertaken to compare baseline participants in all intervention/control groups (including demographic background, own oral health-related characteristics, perceptions of their child's oral health and oral health-related behaviour, and knowledge and attitudes concerning the importance of their child's primary dentition and other oral-health-related issues) - no significant differences found <b>Programme/Intervention description:</b> <b>Intervention Group 1 –</b> standardised information (flip chart): <b>What was delivered:</b>	<b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated): <b>Outcome name:</b> Returning for operative appointment either right away or after rescheduling (Goal 1 – whether the use of illustrative educational aides improved the parent's/guardians responses to the operative appointment) <b>Outcome definition:</b> Whether the use of illustrative education aides improved parents/guardians responses to the operative appointment compared to the responses of the parents/guardians' who were only given verbal instructions <b>Outcome measure:</b> percentages of patients who returned	<b>Oral health (clinical) results:</b> <i>Plaque scores</i> Mean: <b>Intervention groups (combined result of group 1, 2 and 3):</b> End point: 1.01 <b>Control group:</b> End point: 1.21 <b>p value:</b> p<.06 <i>Gingival health</i> Mean: <b>Intervention groups (combined result of group 1, 2 and 3):</b> End point: 1.71 <b>Control group:</b> End point: 1.87 <b>p value:</b> p<.22 <b>Behavioural results:</b> <i>Returning for operative appointment either right away or after</i>	<b>Limitations identified by author:</b> NR <b>Limitations identified by review team:</b> No information on whether allocation into groups was concealed or whether participants/investigators were blind to exposure and comparison. The study isn't a UK setting: participants are Medicaid-eligible children. For some outcomes/results the 3 intervention groups were reported on as one group – therefore the distinction between the impacts of each group/intervention is not clear. Exact follow up times are not clear (although each follow-up is less than 11 weeks) <b>Evidence gaps:</b> This study showed that the way this information was provided, namely with the

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>whether informing parents/guardians about their child's oral healthcare needs with a standardised illustrated educational tool, an individualised illustrated drawing, or both illustrated educational tools would result in a better response from the parent and the child compared to responses when verbal communication strategies were used.</p> <p><b>Study Design:</b> Parallel RCT. If the child required an operative visit, the parents were randomly assigned with a random number table to 1 of 4 conditions for the treatment plan consultation.</p> <p><b>Quality Score (++, +, or -): +</b></p>	<p>adult sibling. Average age = 31.52 years old.</p> <p><b>Sex:</b> Children = 88 males, 101 females</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> Children = 95 African Americans/52 European Americans/6 Asian Americans/ 5 Hispanics/ 21 biracial</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> Families must have an annual income of not greater than 200% of the federal poverty level</p> <p><b>Social capital:</b> NR</p> <p><b>Eligible population (describe how individuals, groups, or clusters were</b></p>	<p>Initial hygiene/treatment plan appointment: Parents undertook a baseline survey: including questionnaires on perceptions of their own oral health, their children's oral health, and their dental fear; knowledge about oral health and their understanding of operative treatment; perception of the importance of the primary dentition; and satisfaction with the previous communication about their children's dental treatment needs.</p> <p>Parents were informed with the help of a standardised illustrated education tool (flip chart) and given verbal information.</p> <p>The flip chart had 3 separate pages with drawings of the primary definition showing the progression of dental caries from healthy teeth to pulpal involvement. To standardise the instruction, a prewritten script about dental caries progression of the primary teeth was read to the parents, regardless of each patient's treatment needs, when showing the flip chart information.</p> <p>Following operative appointment: Following the operative appointment, the</p>	<p>for the operative appointment either right away or after rescheduling</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> %</p> <p><b>Time points measured:</b> Following initial planning appointment (the intervention)</p> <p><b>Outcome name:</b> Responses of the parents/guardians at the operative appointment (Goal 1 – whether the use of illustrative educational aides improved the parent's/guardians responses to the operative appointment: Effect of information at the planning appointment)</p> <p><b>Outcome definition:</b> Whether the use of illustrative educational aides improved the parent's/guardians responses to the operative appointment: responses of the</p>	<p><b>rescheduling Percentage:</b></p> <p><b>End point:</b> <b>Intervention group</b> 1: 87%</p> <p><b>Intervention group</b> 2: 84%</p> <p><b>Intervention group</b> 3: 94%</p> <p><b>Control:</b> 71%</p> <p>P=.02</p> <p>An analysis of average days between the treatment plan consultations and the operative appointments showed that an average number of days in the 4 conditions did not differ significantly (control =35.38 days, vs. standardised condition = 34.17 days, vs. individualised condition = 38.73 days, vs. combined condition = 47.08 day, p=.06)</p> <p><b>Responses of the parents/guardians at</b></p>	<p>help of illustrations, was a crucial determinant of the parents' – and even child's – responses following the operative appointment. It could be that the visual information given allowed the parents to visualise their own children's disease status, resulting in a sense of increased self-efficacy and trust of the dental provider. It might be beneficial to explore and define the underlying process that motivated the parents and patients and mediated those positive outcomes. Future research should explore these underlying processes to pinpoint patient and parent motivation.</p> <p><b>Source of funding:</b> The research was supported by a grant from the Delta Dental foundation of Michigan.</p>

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<b>External Validity</b> (++, +, or -): + <b>recruited, e.g. media advertisement, class list, area:</b> Parents whose children met the inclusion criteria were identified at the hygiene appointment. Parents were invited to participate in the study, and if they agreed, signed consent and HIPAA forms and responded to a baseline study.  <b>State if eligible population is considered by the study authors as representative of the source population:</b> NR  <b>Inclusion Criteria:</b> Children between 4 and 10 years; healthy; not developmentally delayed; free from	<b>recruited, e.g. media advertisement, class list, area:</b> Parents whose children met the inclusion criteria were identified at the hygiene appointment. Parents were invited to participate in the study, and if they agreed, signed consent and HIPAA forms and responded to a baseline study.  <b>State if eligible population is considered by the study authors as representative of the source population:</b> NR  <b>Inclusion Criteria:</b> Children between 4 and 10 years; healthy; not developmentally delayed; free from	parents and children responded to a post-operative appointment survey, which assessed their responses to their child's treatment. Each dentist assessed the child patient's behaviour with the Frankl behaviour rating scale at 6 points during the appointment: 1. When seated in the dental chair, 2. During administration of local anesthesia, 3. During rubber dam placement, 4. During decay excavation or tooth extraction, 5. During restoration placement and 6. Upon dismissing the patient. The dentists also recorded whether the parent was present in the operatory and whether nitrous oxide was used. Gingival and plaque scores taken. <b>Theoretical basis:</b> N/A <b>By whom:</b> Dentists <b>To whom:</b> Parents (and child) <b>How delivered:</b> Verbal instruction and visual flip chart <b>When/where:</b> Paediatric dental clinic <b>How often:</b> Pre-op visit (planning appointment) followed by operative visit <b>How long for:</b> Operative appointment was less than 11 weeks following initial	<b>parents/guardians at the operative appointment</b> <b>Outcome measure:</b> Questionnaire <b>Outcome measure validated:</b> NR <b>Unit of measurement:</b> Various 5 point scales (Q1: 1=not at all helpful to 5=very helpful; Q2: 1=I knew nothing to 5=I knew everything; Q3 and Q6: 1=very nervous to 5=very relaxed; Q4: 1=very dissatisfied to 5=very satisfied; Q5: 1=very uncomfortable to 5=very comfortable) <b>Time points measured:</b> At the operative appointment (less than 11 weeks following initial (intervention) appointment)  <b>Outcome name:</b> Plaque scores <b>Outcome definition:</b> Children's oral hygiene status. <b>Outcome measure:</b> Examination	<i>the operative appointment</i> <i>Mean scores</i>  How helpful was the information we gave you last time for preparing your child for his/her dental treatment today? 1= not at all helpful to 5=very helpful <b>End point:</b> <b>Control:</b> 3.74 <b>Intervention group 1:</b> 4.18 <b>Intervention group 2:</b> 4.11 <b>Intervention group 3:</b> 3.88 <b>P value:</b> .03  Before you came to the appointment today, how much did you know about what would be done? 1=I knew nothing to 5=I knew everything <b>End point:</b> <b>Control:</b> 3.56 <b>Intervention group 1:</b> 3.71 <b>Intervention group 2:</b> 3.98 <b>Intervention group</b>	

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	<p>other mental health disorders. Children were only included if they did not require pharmacological methods of sedation other than nitrous oxide/oxygen in order to perform the operative treatment.</p> <p>Children included were seen for an operative appointment in less than 11 weeks following their initial hygiene and treatment planning appointment</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> 99% (189 out of 191)</p> <p><b>Potential sources</b></p>	<p>hygiene and treatment planning appointment. Whole study was over 12 months</p> <p><b>Programme/Intervention description:</b> <b>Intervention Group 2 -</b> Individualised illustration: <b>What was delivered:</b> Parents undertook a baseline survey: including questionnaires on perceptions of their own oral health, their children's oral health, and their dental fear; knowledge about oral health and their understanding of operative treatment; perception of the importance of the primary dentition; and satisfaction with the previous communication about their children's dental treatment needs.</p> <p>Parents educated about their child's oral healthcare needs and the upcoming operative appointment verbally and individualised illustration. Parents were informed about their children's dental treatment needs as they watched the dental hygienist draw the child's treatment needs on a pre-printed occlusal and cross-sectional illustration of the</p>	<p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Scale: 0=no plaque to 3=heavy accumulation of plaque</p> <p><b>Time points measured:</b> At operative appointment</p> <p><b>Outcome name:</b> Gingival health</p> <p><b>Outcome definition:</b> Children's oral hygiene status.</p> <p><b>Outcome measure:</b> Examination</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> Scale: 1 = normal gingival to 4=severe inflammation</p> <p><b>Time points measured:</b> At operative appointment</p> <p><b>Outcome name:</b> Children's behaviour during the appointment</p> <p><b>Outcome definition:</b> The dentist rated the children's behaviour during the</p>	<p><b>3:</b> 3.86</p> <p><b>P value:</b> .32</p> <p>How nervous/relaxed do you feel about your child's appointment today? 1=very nervous to 5=very relaxed</p> <p><b>End point:</b> <b>Control:</b> 3.90</p> <p><b>Intervention group 1:</b> 3.92</p> <p><b>Intervention group 2:</b> 4.11</p> <p><b>Intervention group 3:</b> 3.98</p> <p><b>P value:</b> .81</p> <p>How satisfied are you with what was done today? 1=very dissatisfied to 5=very satisfied</p> <p><b>End point:</b> <b>Control:</b> 4.41</p> <p><b>Intervention group 1:</b> 4.50</p> <p><b>Intervention group 2:</b> 4.66</p> <p><b>Intervention group 3:</b> 4.29</p> <p><b>P value:</b> .23</p> <p>How comfortable were you with what</p>	

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	<b>of bias:</b> NR	<p>primary dentition (as seen in a bitewing radiograph of the primary dentition and the first permanent molars) using red felt tip pen.</p> <p>Following the operative appointment, the parents responded to a post-operative appointment survey, which assessed their responses to their child's treatment. Each dentist assessed the child patient's behaviour with the Frankl behaviour rating scale at 6 points during the appointment: 1. When seated in the dental chair, 2. During administration of local anesthesia, 3. During rubber dam placement, 4. During decay excavation or tooth extraction, 5. During restoration placement and 6. Upon dismissing the patient.</p> <p>The dentists also recorded whether the parent was present in the operatory and whether nitrous oxide was used.</p> <p>Gingival and plaque scores taken.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Dentist</p> <p><b>To whom:</b> Parents (and child)</p>	<p>appointment with the Frankl behaviour rating scale</p> <p><b>Outcome measure:</b> Behaviour during appointment</p> <p><b>Outcome measure validated:</b> NR</p> <p><b>Unit of measurement:</b> The Frankl behaviour scale: 1 = "definitely negative", 2 = "negative", 3 = "positive", 4 = "definitely positive".</p> <p><b>Time points measured:</b> At operative appointment</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders): ITT - NR</p> <p>Analysis: Chi-square tests were used to analyse whether the percentages of</p>	<p>was done today? 1=very uncomfortable to 5=very comfortable</p> <p><b>End point:</b></p> <p><b>Control:</b> 4.25</p> <p><b>Intervention group 1:</b> 4.21</p> <p><b>Intervention group 2:</b> 4.47</p> <p><b>Intervention group 3:</b> 4.34</p> <p><b>P value:</b> .50</p> <p>How nervous/relaxed do you feel about your child's next appointment? 1=very nervous to 5=very relaxed</p> <p><b>End point:</b></p> <p><b>Control:</b> 4.24</p> <p><b>Intervention group 1:</b> 4.21</p> <p><b>Intervention group 2:</b> 4.29</p> <p><b>Intervention group 3:</b> 4.24</p> <p><b>P value:</b> .98</p> <p><i>Child behaviour during the operative appointment</i></p> <p><i>Mean score (n)</i></p> <p>When seated in dental chair</p>	

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		<p><b>How delivered:</b> Educated verbally and with individualised illustration</p> <p><b>When/where:</b> Paediatric dental clinic</p> <p><b>How often:</b> Pre-op visit (planning appointment) followed by operative visit</p> <p><b>How long for:</b> Operative appointment was less than 11 weeks following initial hygiene and treatment planning appointment. Whole study was over 12 months</p> <p><b>Programme/Intervention description:</b></p> <p><b>Intervention Group 3 -</b> Standardised and individualised information (flip chart and illustration):</p> <p><b>What was delivered:</b> Parents undertook a baseline survey: including questionnaires on perceptions of their own oral health, their children's oral health, and their dental fear; knowledge about oral health and their understanding of operative treatment; perception of the importance of the primary dentition; and satisfaction with the previous communication about their children's dental treatment needs.</p>	<p>parents with different educational communications differed in the following 2 dependent variables: 1) return for operative appointment and 2) staying in the operatory with the child during treatment. Univariate analyses of variances were used to analyse whether the parent in the 4 conditions differed in their responses to the operative appointment. Independent sample t tests were used to compare the behaviour ratings of children whose parents had received the traditional information with the ratings of children whose parents had received illustrative information during the health education process. A significance level of <math>P &lt; .05</math> was used.</p>	<p><b>End point:</b>  <b>Control:</b> 3.35 (77)</p> <p><b>Intervention groups (combined result of group 1, 2 and 3):</b>  <b>3.62 (118)</b></p> <p><b>P value:</b> .03</p> <p>During local anaesthesia administration</p> <p><b>End point:</b>  <b>Control:</b> 2.97 (36)</p> <p><b>Intervention groups (combined result of group 1, 2 and 3):</b>  <b>3.39 (115)</b></p> <p><b>P value:</b> &lt;.01</p> <p>During placement of the rubber dam</p> <p><b>End point:</b>  <b>Control:</b> 3.21 (33)</p> <p><b>Intervention groups (combined result of group 1, 2 and 3):</b>  <b>3.36 (107)</b></p> <p><b>P value:</b> .31</p> <p>During excavation of the decay</p> <p><b>End point:</b>  <b>Control:</b> 3.29 (34)</p> <p><b>Intervention groups (combined result of group 1, 2 and 3):</b></p>	

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		<p>Parents educated about their child's oral health care needs and the upcoming operative appointment verbally and individualised illustration. The flip chart had 3 separate pages with drawings of the primary definition showing the progression of dental caries from healthy teeth to pulpal involvement. To standardise the instruction, a prewritten script about dental caries progression of the primary teeth was read to the parents, regardless of each patient's treatment needs, when showing the flip chart information.</p> <p>Parents were also informed about their children's dental treatment needs as they watched the dental hygienist draw the child's treatment needs on a pre-printed occlusal and cross-sectional illustration of the primary dentition (as seen in a bitewing radiograph of the primary dentition and the first permanent molars) using red felt tip pen.</p> <p>Following the operative appointment, the parents responded to a post-operative</p>		<p>3.54 (110)  <b>P value:</b> .10</p> <p>During extraction of tooth  <b>End point:</b>  <b>Control:</b> 3.50 (8)  <b>Intervention groups (combined result of group 1, 2 and 3):</b>  3.62 (13)  <b>P value:</b> .71</p> <p>During placement of the restoration  <b>End point:</b>  <b>Control:</b> 3.47 (34)  <b>Intervention groups (combined result of group 1, 2 and 3):</b>  3.60 (113)  <b>P value:</b> .35</p> <p>At dismissal from the appointment <b>End point:</b>  <b>Control:</b> 3.62 (37)  <b>Intervention groups (combined result of group 1, 2 and 3):</b>  3.68 (119)  <b>P value:</b> .61</p> <p><b>Average behaviour rating:</b>  <b>End point:</b></p>	

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		<p>appointment survey, which assessed their responses to their child's treatment. Each dentist assessed the child patient's behaviour with the Frankl behaviour rating scale at 6 points during the appointment: 1. When seated in the dental chair, 2. During administration of local anaesthesia, 3. During rubber dam placement, 4. During decay excavation or tooth extraction, 5. During restoration placement and 6. Upon dismissing the patient. The Frankl behaviour scale: 1 = "definitely negative", 2 = "negative", 3 = "positive", 4 = "definitely positive".</p> <p>The dentists also recorded whether the parent was present in the operatory and whether nitrous oxide was used.</p> <p>Gingival and plaque scores taken.</p> <p><b>Theoretical basis:</b> N/A</p> <p><b>By whom:</b> Dentist</p> <p><b>To whom:</b> Parents (and child)</p> <p><b>How delivered:</b> educated verbally, plus standardised visual tool (flip chart) and individualised tool (illustration)</p> <p><b>When/where:</b> Paediatric dental</p>		<p><b>Control:</b> 3.30 (33)</p> <p><b>Intervention groups (combined result of group 1, 2 and 3):</b> 3.54 (107)</p> <p><b>P value:</b> .04</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control): 30 families (16%) failed to return for their scheduled operative appointment</p> <p><b>Conclusion:</b> Based on this study's results, the following conclusions can be made: Compared to parents who had been informed with verbal communication, parents who received illustrated information about their child's oral health treatment needs: a. were significantly more</p>	

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		<p>clinic</p> <p><b>How often:</b> Pre-op visit (planning appointment) followed by operative visit</p> <p><b>How long for:</b> Operative appointment was less than 11 weeks following initial hygiene and treatment planning appointment. Whole study was over 12 months</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Parents undertook a baseline survey: including questionnaires on perceptions of their own oral health, their children's oral health, and their dental fear; knowledge about oral health and their understanding of operative treatment; perception of the importance of the primary dentition; and satisfaction with the previous communication about their children's dental treatment needs.</p> <p>Parents educated about their child's oral healthcare needs and the upcoming operative appointment verbally without any visual information being provided. Following the operative appointment, the</p>		<p>likely to return to an operative dental appointment with their child; b. felt that this information had been more helpful to prepare them for their child's operative visit; and c. were less likely to insist on being in the operatory with their child during the operative visit.</p> <p>Children of the parents who had received illustrated information about their child's oral health and treatment needs behaved significantly better during the operative appointment than children whose parents had received traditional/verbal information.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>parents responded to a post-operative appointment survey, which assessed their responses to their child's treatment. Each dentist assessed the child patient's behaviour with the Frankl behaviour rating scale at 6 points during the appointment:</p> <ol style="list-style-type: none"> <li>1. When seated in the dental chair,</li> <li>2. During administration of local anesthesia,</li> <li>3. During rubber dam placement,</li> <li>4. During decay excavation or tooth extraction,</li> <li>5. During restoration placement and</li> <li>6. Upon dismissing the patient.</li> </ol> <p>The dentists also recorded whether the parent was present in the operatory and whether nitrous oxide was used. Gingival and plaque scores taken</p> <p><b>By whom:</b> Dentists</p> <p><b>To whom:</b> Parents (and child)</p> <p><b>How delivered:</b> Educated verbally</p> <p><b>When/where:</b> Paediatric Dental clinic</p> <p><b>How often:</b> Pre-op visit (planning appointment) followed by operative visit</p> <p><b>How long for:</b> Operative appointment was less than 11 weeks following initial hygiene and treatment planning appointment. Whole study was</p>			

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
		<p>over 12 months</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 189</b>  <b>Intervention group 1 N = NR</b>  <b>Intervention group 2 N = NR</b>  <b>Intervention group 3 N = NR</b>  <b>Control Group N = NR</b></p> <p><b>Baseline comparisons (report any baseline differences between groups in important confounders):</b> Analysis was undertaken to compare baseline participants in all intervention/control groups (including demographic background, own oral health-related characteristics, perceptions of their child's oral health and oral health-related behaviour, and knowledge and attitudes concerning the importance of their child's primary dentition and other oral-health-related issues) - no significant differences found</p> <p><b>Study sufficiently powered (power calculations and provide details): NR</b></p>			

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Mike Wanless</p> <p><b>Year:</b> 2001</p> <p><b>Citation:</b> Wanless, W. (2001) An audit of dental health education material, International Journal of Health Promotion and Education, 39:4, 106-108, DOI: 10.1080/14635240.2001.10806184</p> <p><b>Country of study:</b> England</p> <p><b>Aim of Study:</b> An audit of dental health education materials frequently used by community dental services in the North West of England is presented. Resources were assessed for the second edition of the Catalogue of Dental Health Resources for England, Wales and Northern Ireland.</p> <p><b>Study Design:</b> Intervention observational study. Assessment techniques for dental health materials used in an Inter-Trust audit.</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p><b>Source Population(s):</b> North West Region of England</p> <p><b>Setting:</b> Unclear</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> NR</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> North West of England</p> <p><b>Occupation:</b> Oral health promoters, dental service managers and community dental officers</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b></p> <p><b>Social capital:</b></p> <p><b>Eligible</b></p>	<p><b>Study description:</b></p> <p><b>What was delivered:</b> The members were asked to bring along a resource which they used frequently. This could be a leaflet, poster, a resource pack or training programme.</p> <p>It was agreed to use the criteria of Blinkhorn et al, rewritten as standards:</p> <ol style="list-style-type: none"> <li>1. The target group is clearly indicated.</li> <li>2. it is in agreement with the Scientific Basis of Dental Health Education and Reports of the Committee on Medical Aspects of Food Policy</li> <li>3. The aim is stated or self-evident.</li> <li>4. The material addresses a dental health problem relevant to the target group.</li> <li>5. The material presents a positive image</li> <li>6. It is understandable to the target group</li> <li>7. The illustrations are appropriate.</li> </ol> <p>The SMOG readability formula was used to provide an assessment of whether the</p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Assessment of resources</p> <p><b>Outcome definition:</b> Readability of the resources which were assessed</p> <p><b>Outcome measure:</b> Assessment</p> <p><b>Outcome measure validated:</b> SMOG was also used in the Catalogue of Dental Health Education Resources</p> <p><b>Unit of measurement:</b> score: standard not achieved; standard achieved; improvement</p>	<p><b>Results:</b></p> <p><b>1. Is the target group clearly defined:</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 5 Standard achieved = 19 Not applicable = 0</p> <p><b>Post discussions:</b> Standard not achieved = 0 Standard achieved = 22</p> <p><b>2. Does it agree with SBDHE/COMA?</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 5</p>	<p><b>Limitations identified by author:</b></p> <p>It was likely that the time constraints meant that the reading age was flagged up as an area but that people did not have the opportunity on the day to systematically simplify the text.</p> <p><b>Limitations identified by review team:</b></p> <p>Time constraints prevented the readability being assessed on all the resources on the day: 11 were done on the day and a further 7 were collected at the end.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p><b>population (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area):</b> The Trusts in the North West Region of England collaborate in a number of Inter-Trust audits, including oral health promotion. Oral health promoters, dental service managers and community dental officers meet to audit an aspect of the service and identify and implement improvements.</p> <p><b>State if eligible population is considered by the study authors as representative of the source</b></p>	<p>material was understandable to the target group rather than rely on subjective opinion, as was used in the Catalogue of Dental Health Education Resources. An assessor explained the principles of SMOG.</p> <p>The formula calculates readability using sentence and word length and is complementary to other criteria including size and type of print, layout and reader-based issues such as previous knowledge. The lower the score the easier the piece is to read (however low levels may appear childish). The aim is to match the reading level of the written material to the reader's level of reading with understanding rather than to reduce the score to the minimum possible.</p> <p><b>Theoretical basis:</b> SMOG test</p> <p><b>By whom:</b> Members had the standards explained to them (by assessor?- unclear)</p> <p><b>To whom:</b> Members: Oral health promoters, dental service managers and community dental officers</p> <p><b>How delivered:</b> Standards explained, undertook a trial on a commercially produced</p>	<p>beyond standard already achieved; improvement but standard not achieved; not applicable</p> <p><b>Time points measured:</b> Pre and post discussions and improvements (Table 1, p.107)</p>	<p>Standard achieved = 18 Not applicable = 1</p> <p><i>Post discussions:</i> Standard not achieved = 1 Standard achieved = 20 Improvement beyond standard already achieved = 1 Improvement but standard not achieved = 1 Not applicable = 1</p> <p><b>3. Is the aim stated/self-evident?</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 4 Standard achieved = 20 Not applicable = 0</p> <p><i>Post discussions:</i> Standard not achieved = 1 Standard achieved = 22 Improvement</p>	<p><b>Evidence gaps:</b> Following the audit exercise some Trusts have rewritten or redesigned their resources and one is now undertaking a systematic review of its oral health promotion resources using the established criteria. It is intended that there will be a follow-up re-audit so that any improvement in standards can be monitored.</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
	<p><b>population:</b> NR</p> <p><b>Inclusion Criteria:</b> Members of the Trusts: Oral health promoters, dental service managers and community dental officers.</p> <p><b>Exclusion Criteria:</b> NR</p> <p><b>% of selected individuals agreed to participate:</b> NR</p> <p><b>Potential sources of bias:</b> As the resources were selected by the members, some bias is probable.</p>	<p>leaflet, subsequent discussion. Then assessed a resource of their peers. Each standard was assessed as having been achieved, not achieved, or not applicable. The groups then discussed the resources and agreed scoring and any improvements. Then reassessed it to reflect any recommended improvements. Members were also asked to assess whether the resources met individual Trust standards (if known).</p> <p>After improvements and discussions the adapted resources were assessed again against the standards using five codings: not achieved; achieved; improvement beyond standard already achieved; improvement but standard not achieved; not applicable.</p> <p><b>When/where:</b> North West England – unclear where</p> <p><b>How often:</b> Once</p> <p><b>How long for:</b> NR</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N =</b> 24 resources were assessed.</p>		<p>beyond standard already achieved = 0 Improvement but standard not achieved = 1 Not applicable = 0</p> <p><b>4. Does the material address a dental health problem relevant to the target group?</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 3 Standard achieved = 21 Not applicable = 0</p> <p><i>Post discussions:</i> Standard not achieved = 1 Standard achieved = 21 Improvement beyond standard already achieved = 0 Improvement but standard not achieved = 2 Not applicable = 0</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p><b>5. Does the material present a positive image?</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 5 Standard achieved = 19 Not applicable = 0</p> <p><i>Post discussions:</i> Standard not achieved = 0 Standard achieved = 19 Improvement beyond standard already achieved = 1 Improvement but standard not achieved = 4 Not applicable = 0</p> <p><b>6. Is it understandable to the target group?</b></p> <p><i>Pre-discussions:</i> Standard not achieved = 6 Standard achieved</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>= 18  Not applicable = 0</p> <p><i>Post discussions:</i>  Standard not achieved = 1  Standard achieved = 19  Improvement beyond standard already achieved = 1  Improvement but standard not achieved = 3  Not applicable = 0</p> <p><b>7. Are the illustrations appropriate?</b></p> <p><i>Pre-discussions:</i>  Standard not achieved = 6  Standard achieved = 16  Not applicable = 2</p> <p><i>Post discussions:</i>  Standard not achieved = 0  Standard achieved = 18  Improvement beyond standard</p>		

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
				<p>already achieved = 1        Improvement but standard not achieved = 4        Not applicable = 1</p> <p>The pre-exercise mean SMOG score was 14.2, with a range from 11 to 16. 4 were scored by the groups after being amended and another 3 were rewritten but not scored at the time.</p> <p>The pre-exercise score for these 7 was a mean of 14.0, with a range from 12 to 16. After amendment it was 13.2, with a range from 11 to 14.5. Thus only a small decrease in SMOG score was actually achieved. It is likely that the time constraints meant that reading age was flagged up as an area but that</p>	

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				<p>people did not have the opportunity on the day to systematically simplify the text.</p> <p><b>Conclusion:</b> No conclusion given except: The criteria as described by Holloway et al provided an excellent framework for an audit exercise which all the responding participants considered to be enjoyable, useful and relevant.</p>	

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Weinstein, P., R. Harrison, and T. Benton</p> <p><b>Year:</b> 2004 (Paper One); Paper Two (2006)</p> <p><b>Citation:</b> Weinstein, P., R. Harrison, and T. Benton, Motivating parents to prevent caries in their young children: one-year findings. <i>Journal of the American Dental Association</i>, 2004. 135(6): p. 731-8. (Paper One)</p> <p>Weinstein, P., R. Harrison, and T. Benton, Motivating mothers to prevent caries: confirming the beneficial effect of counselling. <i>Journal of the American Dental Association</i>, 2006. 137(6): p. 789-93. (Paper Two)</p> <p><b>Country of study:</b></p>	<p><b>Source Population(s):</b> Country of study (include if developed or non-developed)</p> <p>Infants aged 6 to 18 months and their mothers from a South Asian Punjabi-speaking community in Surrey (Canada).</p> <p><b>Setting:</b> Setting of intervention is unclear. Population was chosen because children of South Asian immigrants are at high risk of developing ECC.</p> <p><b>Location (urban or rural):</b> NR</p> <p><b>Sample characteristics:</b></p> <p><b>Age:</b> Infants 6 to 18 months</p> <p><b>Sex:</b> NR</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p>	<p><b>Method of allocation</b> (Describe how selected individuals/clusters were allocated to intervention or control groups – state if not reported): Table of random numbers used. In addition the children were stratified into 2 age groups (6 to 12 months and older than 12 months) for each sex. The age stratification was used to account for individual differences in the number of erupted teeth and the time of exposure to cariogenic foods. We used sex stratification to account for any parenting differences that may have affected caries risk.</p> <p><b>Report how confounding factors were minimised:</b> No significant differences between the intervention and control group were identified at the baseline with the exception of age. This was controlled for in the logistic regression model that was undertaken. No information was provided on blinding or contamination.</p> <p><b>Programme/Intervention description:</b></p>	<p><b>Outcomes</b> (include details of all relevant outcome measures and whether measures are objective or subjective or otherwise validated):</p> <p><b>Outcome name:</b> Caries</p> <p><b>Outcome definition:</b> New carious lesions</p> <p><b>Outcome measure:</b> Visual examinations using a modification of the criteria of Radke. Calibrated examiner (either author or local dentist)</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> NR</p> <p><b>Time points measured:</b> Annually (for 2 years)</p> <p><b>Outcome name:</b> Behaviour</p> <p><b>Outcome definition:</b> Parenting practices were assessed, as well as dietary and hygiene practices that affect</p>	<p><b>Oral health (clinical) results:</b></p> <p><b>Children with new Decayed or Filled Surfaces (DFS):</b></p> <p>% of groups (no information on actual numbers provided):</p> <p>Intervention group(s): Baseline: 0% Year 1 follow-up: 15.2% Year 2 follow-up: 35.2%</p> <p>Control group(s): Baseline: 0% Year 1 follow-up: 26% Year 2 follow-up: 52%</p> <p>Difference between groups at Year 1 was significant: <math>\chi^2 = 5.67</math>, <math>P &lt; 0.02</math>, two sided</p> <p><b>NOTE:</b> While the chart on page 792 of Paper 2 indicates that the percentage of children with DFS at baseline was zero, page 735 (para.4) of</p>	<p><b>Limitations identified by author:</b></p> <p>Compared 2 treatments – did not have a placebo control group.</p> <p>Cost effectiveness not assessed</p> <p>All parents in the study were volunteers – it may not be possible to generalise the results to entire populations.</p> <p><b>Limitations identified by review team:</b></p> <p>The source population is not well described in terms of demographics and there is no information to test whether the sample is representative, or whether refusals amongst the eligible population may have prejudiced the sample.</p> <p>As the control group received a leaflet and video intervention there was no usual practice group to</p>

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<p><b>Canada</b></p> <p><b>Aim of Study:</b> Paper One: To compare the effect of a motivational interviewing counselling treatment with that of traditional health education on parents of young children at high risk of developing dental caries.</p> <p>Paper Two: The purpose of this study was to compare the effect of a motivational interviewing (MI) counselling visit with traditional health education for mothers of young children at high risk of developing dental caries. The aim of this article is to provide additional evidence of the efficacy of MI with mothers of young</p>	<p><b>Religion:</b> NR  <b>Place of residence:</b> NR  <b>Occupation:</b> NR  <b>Education:</b> NR  <b>Socioeconomic position:</b> NR  <b>Social capital:</b> NR</p> <p><b>Eligible population</b> (describe how individuals, groups, or clusters were recruited, e.g. media advertisement, class list, area): Recruited by visiting temples and fairs in the South Asian Punjabi-speaking community in Surrey (Canada).</p> <p><b>State if eligible population is considered by the study authors as representative of the source population:</b> NR – as the method of recruitment was based on visiting temples and fairs it is unlikely to be representative in any statistically significant sense. The women</p>	<p><b>What was delivered:</b> Parents in the experimental group received the same pamphlet and video (as the control group), as well as one 45 minute counselling session.</p> <p><b>Theoretical basis:</b> Motivational Interviewing for behavioural change</p> <p><b>By whom:</b> Local South Asian women were trained and conducted motivational interviewing</p> <p><b>To whom:</b> No additional information</p> <p><b>How delivered:</b> Written (pamphlet) and visual (video) and Motivational Interviewing session. Pamphlet and video were modified to include dietary and non-dietary ECC-preventive strategies appropriate to the local South Asian community. MI was used to establish rapport with the patients, present and discuss a menu of oral hygiene options with them.</p> <p><b>When/where:</b> NR</p> <p><b>How often:</b> Patients received: initial visit, followed by 2 follow-up telephone calls at 2 weeks and one month after initial contact. Parents were then called 4 times during maintenance period and 2</p>	<p>ECC</p> <p><b>Outcome measure:</b> Each parent completed 2 interview schedules used in previous studies. In addition 2 instruments were used to assess parenting practices.</p> <p><b>Outcome measure validated:</b> Unclear</p> <p><b>Unit of measurement:</b> NR</p> <p><b>Time points measured:</b> Annually (for 2 years)</p> <p>Although behaviour is reported as an outcome in both papers they do not present any results and both say the results of these measures will be published elsewhere.</p> <p><b>Method of analysis</b> (indicate if ITT or completer analysis was used and if adjustments were made for any baseline differences in important confounders):</p>	<p>Paper One states that 2 children in the intervention group and 4 in the control group had carries at baseline.</p> <p>After controlling for age and number of fluoride varnish visits in year 2 the protective effect of MI after 2 years had not diminished (Odds Ratio=37, CI = 0.76 to 1.76).</p> <p><b>Caries surfaces after one year</b></p> <p>1 year findings:</p> <p>Intervention group: Mean:0.71 Standard deviation:2.8 Range:0-25</p> <p>Control group: Mean:1.91 Standard deviation:4.8 Range:0-25</p> <p>Difference between groups at Year 1 was</p>	<p>compare the intervention with.</p> <p>The use of follow-up calls in the intervention group means that it is difficult to ascertain whether it was the counselling that explained the difference in results from the control, or the reminders made during the maintenance period. This is a serious weakness.</p> <p>It is not clear whether the intervention was delivered in a dental clinic or not. It is possible it was delivered at a community centre which limits the applicability of the findings to this study.</p> <p>The results of the intervention on the behavioural outcome are not reported in either paper although they are said to be reported elsewhere.</p>

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<p>children after 2 years of follow-up.</p> <p><b>Study Design:</b> RCT – allocation by individual</p> <p><b>Quality Score (++, +, or -):</b> -</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p>recruited are more likely to be those who are active in those places and may differ from the overall population in terms of social class, occupation or religion amongst other factors.</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> Excluded if a history of a serious acute or chronic disease that would interfere with ability of the child and parent to participate fully</p> <p><b>% of selected individuals agreed to participate:</b> NR – all participants were volunteers</p> <p><b>Potential sources of bias:</b></p>	<p>postcard reminders were sent.</p> <p><b>How long for:</b> Actual length of time from the counselling session to the second follow-up call was just one month. However this extends to a total of 6 months after initial contact if maintenance period is included.</p> <p><b>Control/Comparator description:</b></p> <p><b>What was delivered:</b> Each subject in the control group received a pamphlet designed by the staff of the local health unit and also viewed a video called “Preventing Tooth Decay for Infants and Toddlers”. This 11 minute educational video was available in five languages, including Punjabi, and was produced by the Vancouver/Richmond Health Board with the advice of one of the investigators</p> <p><b>By whom:</b> Leaflet designed by the staff of the local government health unit. Video produced by the Vancouver/Richmond Health Board</p> <p><b>To whom:</b> No additional information</p> <p><b>How delivered:</b> Written (pamphlet) and visual (video). Pamphlet and video were</p>		<p>significant: <math>t[238]=2.37</math>, one-tailed, <math>P&lt;0.01</math></p> <p>Logistic regression analysis of caries incidence – suggest that both age (Odds ratio=1.080, CI=1.014-1.150 <math>p=0.016</math>) and treatment (Odds Ratio= 1.927, CI=0.967-3.842, <math>p=0.062</math>) had an effect, but sex did not.</p> <p><b>Behavioural results:</b> These are not presented in either paper and both state that they are published elsewhere.</p> <p><b>Attrition details:</b> Indicate the number lost to follow up and whether the proportion lost to follow-up differed by group (i.e. intervention vs control)</p> <p>After 2 years in the</p>	<p><b>Evidence gaps:</b> No additional research suggested.</p> <p><b>Source of funding:</b> The study was supported by grant P60 DE13061 from the National Institutes of Health, National Institute of Dental and Craniofacial Research, Bethesda, Md</p>

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		<p>modified to include dietary and non-dietary ECC-preventive strategies appropriate to the local South Asian community</p> <p><b>When/where:</b> NR</p> <p><b>How often:</b> Unclear – annual assessments over a 2 year period but intervention may only have been once</p> <p><b>How long for:</b> 11 minute video.</p> <p><b>Sample size at baseline:</b></p> <p><b>Total sample N = 240</b></p> <p><b>Intervention group N = NR</b></p> <p><b>Control Group N = NR</b></p> <p><b>Baseline comparisons</b> (report any baseline differences between groups in important confounders): No significant differences were found between the groups in terms of demographic variables (such as child's sex, mother's marital status, mother's time in Canada, mother's rural or urban status, mother's residence history and number of household members); perinatal factors, child health parameters; or exposure to fluoride supplements, antibiotics and vitamins. Differences in caries status and unerupted dentition were not significant. The only significant difference</p>		<p>trial 205 (85%) of the 240 children were available for follow-up dental examination. There is no information on the breakdown of these numbers by group.</p> <p><b>Conclusion:</b></p> <p>Results suggest that MI counselling has an effect on children's health that is greater than the effect of traditional health education.</p> <p>MI presents promise in working with the parents of young children to prevent caries in those children, especially children at high risk of developing the disease.</p>	

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		<p>was in age (see note on the minimisation of confounding factors above).</p> <p><b>Study sufficiently powered</b> (power calculations and provide details):<b>NR</b></p>			

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<b>Author:</b> M Williams and J Bethea <b>Year:</b> 2011 <b>Citation:</b> Williams, M. and J. Bethea, Patient awareness of oral cancer health advice in a dental access centre: a mixed methods study. British Dental Journal, 2011. 210(6): p. E9. <b>Country of study:</b> England (Nottinghamshire) <b>Quality Score (++, +, or -):</b> +	<b>Study design:</b> Mixed methods <b>Research aims, objectives, and questions:</b> The purpose of this paper is to determine the extent of patient awareness of a combined poster and leaflet campaign providing opportunistic information about the risks of smoking and excess alcohol consumption to patients whose lifestyle habits place them at risk of developing oral cancer. (p.1 (para.3) and p.2 (para.1)) <b>Theoretical approach [grounded theory, IPA etc]:</b> <b>State how data were collected:</b> <b>What method(s):</b> Mixed methods approach. Data were collected during 2 time periods in line with the poster campaign being run at the Integrated Dental Unit. Mouth cancer information leaflets provided by Cancer Research UK were displayed in the patient	<b>Population the sample was recruited from:</b> All patients aged 18 years and over attending within 5 <sup>th</sup> November 2007- 21 <sup>st</sup> December 2008 and 19 <sup>th</sup> May 2008 to 11 <sup>th</sup> July 2008. (p.2 para.2) <b>How sample was recruited:</b> As it was anticipated that uptake to the interview phase of the study would be low, a true purposive approach to sampling could not be taken and instead all patients who returned their contact details to the researcher were interviewed. (p.3 para.2) <b>How many participants recruited:</b> 1161 (89.7% of 1294 patients asked) provided quantitative data to triage nurse and were split into groups. 424 of these came under the "High" or "Very High" groups from which patients were recruited for interviews. (p.2 Table 1 and p.3 para.3) 9 recruited for interviews. (p.3 para.2)	<b>Brief description of method and process of analysis [including analytic and data collection technique]:</b> Initially face-to-face interviews were conducted but as initial uptake was very poor, the study team amended the protocol and offered participants the option to be interviewed over the telephone. Of the 9 interviews that were completed, 2 were done face-to-face and 7 were conducted over the telephone. All interviews were audio-taped and transcribed verbatim. Thematic analysis was undertaken by the researcher and the analysis and interpretations were verified by a second researcher with experience of qualitative research methods. (p.3 para.2) <b>Quantitative results – Awareness of poster and leaflet campaign</b> All groups: Read at least some of the information: 535 (46.1%) Read poster only: 392 (37.8% of 1036) Read leaflet only : 47 (4.5% of 1033) Read poster and leaflet: 25 (2.4% of 1038) (p.2 Table 2) The number reporting having read any of the information in each consumption group did not differ significantly, with 48.6% (261 of 537) of those in the low consumption group reporting having read	<b>Limitations identified by author:</b> Firstly, of the 1,294 patients who were eligible to participate in the study, data on consumption were available for 1,161 (89.7%). Data were not collected for all participants for a variety of reasons, for example, in a small number of cases the triage nurses felt the patient was too distressed to answer the questions relating to consumption and whether or not they had taken notice of the information campaign. In the majority of cases, however, data were excluded because the data sheets were not fully or accurately completed. An analysis of this missing data showed that cases not included were not different in terms of age or sex, with the median ages of excluded and included cases being very similar (33 years and 32 years) and a similar proportion of excluded cases being female (45% of excluded cases compared to 39% of

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	<p>waiting areas of the IDU together with a number of A4 posters with bullet-point facts about oral cancer. Patients were asked by the triage nurse if they had read the information provided as part of the information campaign (p.2 para.2)</p> <p>Information provided by patients regarding their alcohol and tobacco consumption was used to place them into one of 4 groups:</p> <ol style="list-style-type: none"> <li>1. Low tobacco and alcohol use group: non-smokers who either do not drink alcohol or drink less than 20 units per week</li> <li>2. Moderate tobacco and alcohol use group: smokers who do not drink alcohol and who smoke up to 20 cigarettes per day</li> <li>3. High tobacco and alcohol use group: smokers who consume up to 20 cigarettes per day and drink up to 20 units of alcohol per week</li> <li>4. Very high consumption group: smokers using in</li> </ol>	<p><b>Sample characteristics – Quantitative element (1,161 patients who provided information on consumption):</b></p> <p><b>Age:</b> 32 years (median)</p> <p><b>Sex:</b> 57.2% were men</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> NR</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Sample characteristics – Qualitative element (9 interview respondents):</b></p> <p><b>Age:</b> 2 female participants were considerably younger (22 years) than others who ranged from 36 to 58 years of age</p> <p><b>Sex:</b> 5 were male and 4 were female</p> <p><b>Sexual orientation:</b> NR</p> <p><b>Disability:</b> NR</p> <p><b>Ethnicity:</b> All 'White British'</p> <p><b>Religion:</b> NR</p> <p><b>Place of residence:</b> NR</p> <p><b>Occupation:</b> NR</p> <p><b>Education:</b> NR</p> <p><b>Socioeconomic position:</b> NR</p>	<p>at least some information, compared with 44.1% (160 of 363) of those in the high consumption group (Chi-square = 2.73, df = 3, p = 0.44). (p.3 para.4)</p> <p><b>Quantitative results – Reasons for not reading the information</b></p> <p>Of the 338 who did give a reason</p> <ul style="list-style-type: none"> <li>Didn't see/ take notice of it: 199 (58.9%)</li> <li>In too much pain to read: 36 (10.7%)</li> <li>Not English speaking: 20 (5.9%)</li> <li>Reading other material: 13 (3.8%)</li> <li>Can't see (no glasses) to read: 12 (3.6%)</li> <li>Ex-smoker: 11 (3.3%)</li> <li>Busy texting/ chatting: 9 (2.7%)</li> <li>Looking after child: 8 (2.4%)</li> <li>No time, seen straight away: 8 (2.4%)</li> <li>Not a drinker or a smoker: 6 (1.8%)</li> <li>Too far away from posters to read: 6 (1.8%)</li> <li>Can't read: 3 (0.9%)</li> <li>Too nervous: 3 (0.9%)</li> <li>Learning disability 2 (0.6%)</li> <li>Sleeping: 1 (0.3%)</li> <li>Did not wait in waiting area: 1 (0.3%) (p.2 Table 3)</li> </ul> <p><b>Qualitative results – Key themes and findings relevant to this review [with illustrative quotes if available]</b></p> <p><b>Knowledge and perceptions about the disease:</b></p> <ul style="list-style-type: none"> <li>Although all but one of the participants stated that they had read the information leaflet</li> </ul>	<p>included cases). (p.5 para 6)</p> <p>Some data were also missing for why participants had not read any of the information available. Again in a small number of cases the triage nurses felt it was inappropriate to ask the patients any further questions due to their pain, but in the majority of cases the data sheets were not fully completed. This is likely to reflect a degree of operator fatigue as the triage nurses were asked to complete the forms over a relatively long period. However, those who weren't asked why they had not read the information were very similar to both those who had given an answer and participants overall in terms of sex, age and consumption (median age of 32 and 38% female, low consumption 41% moderate 20% high or very high 39%). (p.5 para 7)</p> <p><b>Limitations identified by review team:</b></p> <p>The initial baseline</p>

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	<p>excess of 20 cigarettes per day, and/or drinking in excess of 20 units of alcohol per week (p.2 para.2)</p> <p>Patients in the high and very high consumption groups were asked if they would participate in an interview with a researcher to explore their knowledge and beliefs about risk factors shown to be linked with oral cancer (p.2 para.3)</p> <p>Patients interested in participating were provided with an information pack that included a description of the study, consent form and contact details. (p.3 para.1)</p> <p><b>By whom:</b> Triage nurse asked about consumption. Researcher then did interviews. (p.2 para.2 and3)</p> <p><b>What setting:</b> Integrated Dental Unit – these provide emergency dental care so not quite sure about eligibility (p.2 para.2)</p> <p><b>When:</b> Poster campaign 5 November 2007-21 December 2007, and 19 May 2008-11 July 2008 (p.2</p>	<p><b>Social capital: NR</b></p> <p><b>Inclusion criteria (for qualitative interview element):</b> Patients classified under with the 'very high' or 'high' consumption groups – see note on methods used. [criteria for quantitative element is the same as population from which sample were recruited]</p> <p><b>Exclusion criteria: NR</b></p>	<p>overall knowledge about the disease was limited and most reported that they knew nothing at all (p.3 para.6)</p> <ul style="list-style-type: none"> <li>When prompted most thought smoking would put them at increased risk largely because smoking was generally related to cancer risk (p.3 para.8)</li> <li>Respondents retained very little information – they knew little about prevalence and when age of onset was reported it was described as being 'older' (p.3 para.10)</li> <li>Few felt they knew the signs and symptoms they should be looking for that might indicate oral cancer (p.3 para.10)</li> </ul> <p><b>Risk factors and risk-taking behaviour:</b></p> <ul style="list-style-type: none"> <li>Although most thought that smoking put them at risk of oral cancer – less than half knew that alcohol consumption had any association with oral cancer risk (p.3 para.12)</li> <li>3 respondents had picked up that alcohol was a risk factor from the leaflet but overall respondents were surprised that alcohol consumption was linked to oral cancer (p.4 para.1)</li> <li>Although all of the respondents knew or at least suspected that</li> </ul>	<p>assessment of alcohol/tobacco consumption which included questions on readership of the leaflet was undertaken with a large majority of patients (89.7%). The rationale for undertaking qualitative research with those patients who came under the "very high" and "high" consumption categories is clear. However the authors admit that they were unable to undertake purposive sampling for the qualitative stage because they were aware that the response rate was likely to be poor. Given the initial sample was very large (424 in eligible groups according to Table 1) and an incentive was used its not clear why the response rate was so poor (just 9 respondents).</p> <p>The authors point out that not all the data sheets for the quantitative element were completed. While this was partly due to completely legitimate ethical reasons it was mainly due to operator fatigue. For the qualitative</p>

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	para.2)		<p>their smoking status put them at increased risk only one participant reported that this knowledge would actually impact on their behaviour (p.4 para.4)</p> <p><b>Profile of the disease:</b></p> <ul style="list-style-type: none"> <li>• Most of the patients did not have a regular dentist either due to limited availability or because of the cost associated with treatment (p.4 par 7)</li> <li>• The respondents felt that oral cancer didn't have the same profile as other cancers (p.4 para.9)</li> </ul> <p><b>Health messages:</b></p> <p>Respondents gave a range of suggestions related to how key messages should best be relayed:</p> <ul style="list-style-type: none"> <li>• Providing information in non-health (in addition to health) settings – such as pubs, clubs, job centres, day centres – was considered important. (p.4 para.12)</li> <li>• In health settings including dental surgeries the sheer volume of health messages provided was thought to reduce impact – one participant felt bombarded by health messages and another felt that books and magazines provided in dental</li> </ul>	<p>interviews the researchers had to change their tactics and include telephone interviews instead of face-to-face interviews for some participants. It is not clear whether the impact of using a different data collection on participant responses (particularly given the differences in 'interviewer effects') has been taken into account.</p> <p>The setting is clear and there is information on some respondent characteristics. Some information on education, income level and ethnicity (given some of the respondents did not read the leaflet due to limited English) would have been useful.. However given the difficulties with data collection it may not have been feasible to collect such information. Context bias does not appear to have been considered -as respondents may have claimed to have read some of the leaflet to please the triage nurse.</p> <p>Reliability of the methods is</p>

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			<p>settings were a distraction that should be got rid of (p.4 paras 12-15)</p> <ul style="list-style-type: none"> <li>• Television and media campaigns were generally considered to be an effective way of relaying key information on cancers (p.4 para.16)</li> <li>• Some of the participants talked about having the key information relayed to them by a health professional as part of a consultation either because written information was not accessible to those with low levels of literacy or because it would have more impact than having the information provided alone (p.4 para.19)</li> <li>• Issues such as cost and accessibility to those who work during office hours were also raised (p.4 para.19)</li> </ul> <p><b>Conclusions:</b></p> <p>In this study, approximately 40% of patients in the target groups read the information available. Disappointingly, it would seem that even after reading the information available, patients' knowledge of risk factors remains poor, and this suggests that the impact of presenting information in this format in the dental access centre will be limited. Other studies have demonstrated that</p>	<p>poor. Although 2 methods were used they generally dealt with different questions - the quant focussed on what information the patients had read and the qual on what information they had retained and how best information had been provided. Given that by far the most common reason for not reading the patient information in the waiting room was because patients "didn't see/take notice of it" - it might have been useful to explore what was meant by this response in more detail in the qualitative interviews.</p> <p>The quantitative analysis was reasonably straightforward. More information could have been provided on how the qualitative data was coded into themes.</p> <p>Differences related to age and gender weren't really explored but given the size of the sample this would have been difficult. Age and gender was noted against each of the quotes used. It would have been useful to</p>

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			<p>patient information leaflets are effective in increasing patient knowledge and awareness of risks related to oral cancer. p.12, para.25–27 These studies have involved patients attending medical and dental practices for routine care, have tested patient knowledge immediately after reading the information leaflet, and were not specifically targeted at high-risk individuals. In addition, patients were handed the information leaflet by the researcher. In this study the poster directed patients to the leaflets for additional information, but were taken up by only a few patients. (p.5 para.4)</p> <p>Of those patients giving a reason for not reading the information, the majority (almost 60%) had not seen or did not notice the posters or leaflets. This might improve with changes in the visual impact of the material. Similarly, the availability of information in a multilingual format, tailored to local community needs, may encourage uptake of information. Just over 10% did not read the information because of pain, and this will always be a difficulty in providing the information in this format to patients that have very immediate dental problems. (p.5 para.9)</p> <p>Although based on a relatively small number the qualitative element does provide some evidence that the provision of information through a simple poster and leaflet format is likely to have limited</p>	<p>know which were telephone and which were face-to-face interviewees so the context is clear.</p> <p>There is no mention of any procedures to ensure reliability of the analysis of the quantitative element. For the qualitative element a second researcher verified the analysis and interpretations.</p> <p>Extracts from the original data are included and the findings are clearly presented. Table 2 contains different sample sizes for different questions from which percentages are calculated. This may be due to non-response to some items. In the limitation section the authors point out that data sheets were often not fully completed due to operator fatigue (though in a minority of cases there were sound ethical reasons for not continuing). However it isn't made clear that this is the cause.</p> <p><b>Evidence gaps and/or recommendations for</b></p>

Study Details	Research Parameters	Population and Sample Selection	Outcomes and Methods of Analysis	Notes by Review Team
			<p>impact. It is known that patients in this high-risk cohort can be extremely difficult to influence and so health promotion in this group might pose significant challenges. Social marketing approaches, which involve developing an in-depth knowledge and understanding of the behaviour and beliefs of the target group, have been shown to be effective in promoting health behaviour change. Such approaches might then also be useful in developing health promotion campaigns around oral cancer. p.5 para.10 and p.6 para.1.</p>	<p><b>future research:</b> Dental access centres should play a significant role in primary prevention but the way in which patient information is provided requires further investigation. Primary Care Trusts should invest in the development and provision of effective measures within dental access centres to provide opportunistic information about the risks of smoking and excess alcohol consumption to targeted cohorts of patients. (p.6 para.3)</p> <p><b>Source of funding:</b> Cancer Research UK provided the leaflets but it is not clear which body provided funding for the rest of the study.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p><b>Author:</b> Witton, R.V., Moles, D.R.</p> <p><b>Year:</b> 2013</p> <p><b>Citation:</b> Witton, R.V., Moles, D.R. (2013) Barriers and facilitators that influence the delivery of prevention guidance in health service dental practice: a questionnaire study of practising dentists in Southwest England. <i>Community Dental Health</i>. 2013 Jun;30(2):71-6</p> <p><b>Aim of Study:</b> To investigate and identify barriers and facilitators that influence the implementation of prevention guidance by health service dentists practicing in Devon, South West England.</p> <p><b>Study Design:</b> Self-completion</p>	<p><b>Source Population(s):</b> Dentists in UK</p> <p><b>Setting:</b> Devon, South West England; Type of practice n, [%]: Urban: 77 [31] Rural: 59 [24] Mixed: 111 [45]</p> <p><b>Sample characteristics:</b> <b>Age:</b> 24-69 (mean 42, SD 11) <b>Sex:</b> 56% male <b>Sexual orientation:</b> NR <b>Disability:</b> NR <b>Ethnicity:</b> NR <b>Religion:</b> NR <b>Place of residence:</b> UK <b>Occupation:</b> Health service general dental practitioners; 45% mixed NHS and Private practice; 75% spent at least half of their time providing NHS dental care <b>Education:</b> 43% qualified for more than 20 years;</p>	<p><b>Method:</b> Between February and June 2011 all 508 health service general dentists registered to practice in the NHS in Devon were sent a questionnaire. Their names and practice (dental office) addresses were obtained from a local health service database.</p> <p>Each recipient received a questionnaire to complete, a pre-paid return envelope, an information sheet explaining the purpose of the research, and a covering letter explaining why they had been chosen. Measures reported in the literature to increase the completion and response rates of questionnaires were followed. In addition, the support of local dental representative committees was obtained to encourage a high response rate.</p> <p>Each dentist received 2 mailings of the questionnaire, 2 weeks apart giving a 4 week window to return the</p>	<p><b>Outcome name:</b> Barriers and Facilitators Questionnaire score</p> <p><b>Outcome definition:</b> A pre-validated barriers and facilitators questionnaire was selected from the literature chosen for its focus on prevention guidelines</p> <p><b>Outcome measure:</b> Barriers and Facilitators Questionnaire</p> <p><b>Outcome measure validated:</b> Yes - pre-validated</p> <p>Data were collected via 37 items, with each item using a 5-point Likert scale so respondents could rate their level of agreement from 'fully agree' to 'fully disagree' organised in 3 principal domains:</p> <p><b>Implementation of 'Delivering better oral health':</b></p> <p>'Delivering Better Oral Health' leaves enough</p>	<p>Examples of barriers and facilitators were evident at various organisational levels of dentistry. These were principally the healthcare system, practice (dental office) arrangements, and professional factors.</p> <p><b>Implementation of 'Delivering better oral health':</b></p> <p>Overall respondents gave positive responses to questions concerning the flexibility (53%) and benefit of the guideline (63%) and they tended to disagree they had problems changing their old routines (58%).</p> <p>Opinion was divided among respondents on whether they felt patients followed their advice (49%) and whether they had support from the local health service in implementing the guideline (51% 'fully disagreed'/'disagreed' that no support was available).</p>	<p><b>Limitations identified by author:</b> The response rate of 52% was disappointing although this rate is consistent with other questionnaire based studies of health professionals. The results may therefore be subject to selection bias. There is no demographic data available locally to compare the profile of responders to the sampling frame and so the results must be interpreted with caution as the issues identified here may not be representative of other dentists locally or nationally in England. Another factor that is relevant to the response rate and with due consideration to the study aims is the possibility that failure to respond to the questionnaire may have been the result</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
<p>questionnaire</p> <p><b>Quality Score (++, +, or -):</b> +</p> <p><b>External Validity(++, +, or -):</b> +</p>	<p><b>Socioeconomic position:</b> NR</p> <p><b>Social capital:</b> NR</p> <p><b>Inclusion Criteria:</b> NR</p> <p><b>Exclusion Criteria:</b> NR</p>	<p>questionnaire. Return of the questionnaire was taken as assent to the process.</p> <p><b>Sample size at baseline:</b> 253 questionnaires were returned (246 fully completed, 7 incomplete)</p> <p><b>Power analysis:</b> NR</p>	<p>room for me to make my own decisions</p> <p>'Delivering Better Oral Health' leaves me enough room to weigh up the wishes of the patient</p> <p>'Delivering Better Oral Health' is a good starting point for my self-study of preventive dentistry</p> <p>I did not thoroughly read 'Delivering Better Oral Health'</p> <p>I do not remember receiving 'Delivering Better Oral Health'</p> <p>I wish to know more about the content before I decide to apply it</p> <p>I have problems changing my old routines</p> <p>I think parts of 'Delivering Better Oral Health' are incorrect</p>	<p>32% felt that to implement the guideline they required additional funding, whereas only 12% opposed this view with the remainder having no strong opinion. Responses to the remaining questions were mixed with no clear pattern of agreement or disagreement.</p> <p><b>Implementation of prevention in general</b></p> <p>There was overall agreement that delivering prevention in practice is problematic if there are insufficient staff (68%), facilities (53%), and time (60%).</p> <p>Most respondents reported feeling adequately trained to deliver preventive guidance (59%). Opinion was roughly evenly divided between respondents on the difficulties of providing preventive care to patients from: different cultural backgrounds (32% overall agreed, and 32% disagreed); that seem</p>	<p>of a lack of awareness of the guideline, or a failure to take the guideline seriously. There is some evidence for this in the questionnaire responses discussed but also in the fact that a number of questionnaires were returned for this reason or were defaced. This highlights a potential fundamental primary barrier to participating in the study and strengthens the argument that passive dissemination of clinical guidelines is not an effective strategy to safeguard their implementation in clinical practice.</p> <p><b>Limitations identified by review team:</b></p> <p>Only frequencies were reported. Further analyses could have provided more depth.</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>I have a general resistance to working according to protocols</p> <p>Fellow dentists (general practitioners) do not co-operate in applying the guidance</p> <p>Other members of the dental team (therapists, hygienists, nurses etc) do not cooperate in applying the guidance</p> <p>The Primary Care Trust do not support implementation of the guideline</p> <p>Patients do not co-operate with the advice in the guidance</p> <p>Working to 'Delivering Better Oral Health' is too time consuming</p> <p>The guidance does not fit into my ways of working at my practice</p> <p>Working according to this guidance requires financial compensation</p>	<p>healthy (49% overall agreed, and 32% disagreed); of low socio-economic status (42% overall agreed, and 41% disagreed); or older patients (47% overall agreed, and 37% disagreed).</p> <p><b>Attrition details:</b> Of the 266 questionnaires returned, 246 (92%) were fully completed, 7 were incomplete (3%), and 13 were either defaced or unusable (5%). 204 questionnaires were not returned (40%), and a further 38 (7%) were returned to sender because the dentists were no longer practicing at the address given by the local health service database.</p> <p><b>Conclusion:</b> The study has identified some barriers and facilitators to the delivery of prevention guidance in this group of health service dentists with no one factor seemingly more important than another.</p>	<p><b>Evidence gaps:</b> There are very few comparative data in the dental literature with which to compare the results of this study. A further qualitative study is planned to investigate in more depth the reasons underpinning the responses given.</p> <p><b>Source of funding:</b> NR</p>

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>The layout of 'Delivering Better Oral Health' makes it easy to use</p> <p><b>Implementation of prevention in general</b></p> <p><b>"It is difficult to give preventive care..."</b></p> <p>If there are not enough support staff</p> <p>If resources needed are not available</p> <p>Because the timing of preventive care is difficult to fit into treatment plans</p> <p>If physical space is lacking (e.g. oral health education room)</p> <p>Because I am not trained in giving evidence-based preventive care</p> <p>Because I have not been involved in setting up preventive care policies in the practice</p>		

Study details	Population and setting	Method of allocation to intervention/control	Outcome definitions and method of analysis	Results	Notes by review team
			<p>To patients with a different cultural background</p> <p>To patients who seem healthy</p> <p>To patients with a low socio-economic status</p> <p>To older patients (60+)</p> <p><b>Demographic details</b></p> <p><b>Method of analysis:</b> Frequency analyses were carried out to describe respondent characteristics and demographics.</p>		

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## Appendix A Search Strategy

The following search strategy was developed for Ovid Medline and adapted as necessary for the additional databases used in the review:

- 1 Health Education, Dental/ (5770)
- 2 ((dental or oral) adj3 (health or hygiene or care) adj3 (educat\$ or promot\$ or program\$ or outreach\$ or instruct\$ or teach\$ or message\$ or advice or counsel\$ or intervention\$ or information or advise\$ or campaign\$ or initiative\$ or strateg\$)).ti. (2634)
- 3 (dental\$ adj3 (promot\$ or program\$ or outreach or instruct\$ or advice or message\$ or counsel\$ or intervention\$ or information or advise\$ or campaign\$ or initiative\$ or strateg\$)).ti. (2546)
- 4 Oral Hygiene/ed [Education] (409)
- 5 Oral Health/ed [Education] (59)
- 6 Oral Hygiene/ and (educat\$ or promot\$ or program\$ or outreach\$ or instruct\$ or teach\$ or message\$ or advice or counsel\$ or intervention\$ or information or advise\$ or campaign\$ or initiative\$ or strateg\$).ti. (1105)
- 7 Oral Health/ and (educat\$ or promot\$ or program\$ or outreach\$ or instruct\$ or teach\$ or message\$ or advice or counsel\$ or intervention\$ or information or advise\$ or campaign\$ or initiative\$ or strateg\$).ti. (1034)
- 8 Public Health Dentistry/ or Community Dentistry/ (3573)
- 9 exp Preventive Dentistry/ (29720)
- 10 ((dentist\$ or dental) and ((public adj3 health) or (community adj3 health) or (community adj3 (program\$ or project\$))).tw. (3880)
- 11 ((dentist\$ or dental) and (health adj2 (general or public))).ti. (941)
- 12 ((dentist\$ or dental) adj4 ((early adj intervention\$) or (early adj diagnos\$) or prevent\$)).tw. (5952)
- 13 (dentist\$ or dental).tw. and (exp public assistance/ or medicaid.tw.) (1207)
- 14 exp Periodontal Diseases/pc [Prevention and Control] (5869)
- 15 exp Tooth Diseases/pc [Prevention and Control] (21896)
- 16 Oral Hygiene/ (10390)
- 17 Oral Health/ (10329)
- 18 ((Oral or dental) adj3 (health or hygiene or care)).tw. (39081)
- 19 (toothbrush\$ or floss\$ or interdental or dental or dentist\$ or dentition or tooth or teeth or mouthwash\$ or mouthrins\$ or toothpaste\$ or dentifrice\$ or caries or periodont\$ or gingiv\$).tw. (339249)
- 20 ((caries or periodont\$) and (prevent\$ or control\$)).ti. (4246)
- 21 exp Health Promotion/ (54632)

- 22 Patient Education as Topic/ (70529)
- 23 Health Education/ (52351)
- 24 Health Communication/ (604)
- 25 Information Dissemination/ (10325)
- 26 Persuasive Communication/ (2993)
- 27 exp Educational Technology/ (86784)
- 28 exp "Tobacco Use Cessation"/mt (7443)
- 29 exp Substance-Related Disorders/ed, pc [Education, Prevention and Control] (18106)
- 30 exp Diet/ed [Education] (12)
- 31 ((health or prevention or preventive) adj3 (promot\$ or educat\$ or instruct\$ or advice or program\$ or outreach or communicat\$ or information or message\$ or counsel\$ or intervention\$ or advise\$ or campaign\$ or initiative\$ or strateg\$)).ti. (53765)
- 32 exp Dental Staff/ (2251)
- 33 exp Dentists/ (15250)
- 34 dental auxiliaries/ or dental assistants/ or dental hygienists/ or dental staff/ (12136)
- 35 ((dental adj (nurse\$ or assistant\$ or (care adj professional\$) or hygienist\$ or therapist\$ or (surgery adj assistant\$) or auxiliar\$ or staff\$ or (health adj educator\$) or (practice adj manager\$ or receptionist\$)) or (oral adj health adj educator\$)).tw. (4620)
- 36 exp dental care/ (25546)
- 37 Group Practice, Dental/ or Partnership Practice, Dental/ or General Practice, Dental/ or Practice management, Dental/ (15274)
- 38 (Dental adj5 (practice\$ or clinic or clinics or office\$ or facility or facilities)).tw. (16041)
- 39 exp Dental Facilities/ (7868)
- 40 (Case reports, or clinical trial, all or comparative study or interview or meta analysis or multicenter study or observational study or systematic reviews or review).pt. (5282046)
- 41 (randomi\$ or quantitat\$ or qualitat\$ or placebo or randomly or (control adj3 (area or cohort\$ or compare\$ or condition or design or group\$ or intervention\$ or participant\$ or study))).tw. (1606278)
- 42 (Trial or (multicent\$ or multi-cent\$) or pilot or review\$ or follow-up or (follow\$ adj up\$) or outcome\$ or study or studies or design or designs or research or ethnograph\$ or intervention\$ or observation\$ or case or evaluat\$ or monitor\$ or program\$ or model\$ or process or interview or interviews or (mixed adj method\$)).tw. (11185457)
- 43 exp empirical research/ (22700)
- 44 40 or 41 or 42 or 43 (13568394)
- 45 exp Nursing/ (222496)
- 46 (midwife\$ or midwives or ((geriatric or (occupational adj health) or orthop\*edic or p\*ediatric or psychiatric or (public adj health) or school or oncology or nephrology) adj (nurse or nurses))).tw. (29247)

47 (p\*ediatrician\$ or obstetrician\$ or doctor\$ or oncologist\$ or forens\$ or (intensive adj care) or (critical adj care) or (family adj physician\$) or technician\$ or laborator\$).tw. (671560)

48 45 or 46 or 47 (895229)

49 1 or 2 or 3 or 4 or 5 or 6 or 7 (9619)

50 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 (358351)

51 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 (313435)

52 50 and 51 (8842)

53 49 or 52 (15304)

54 32 or 33 or 34 or 35 (26962)

55 36 or 37 or 38 or 39 (55606)

56 54 or 55 (74454)

57 53 and 56 (4836)

58 57 not 48 (4663)

59 animals/ not humans/ (3874907)

60 58 not 59 (4662)

61 limit 60 to english language (4004)

62 limit 61 to yr="1994 -Current" (2490)

63 44 and 62 (1818)

## Appendix B Quality Assessment Checklists

### Quality Assessment Checklist for Intervention Studies

<b>Study identification:</b> (Include full citation details)		
<b>Study design:</b> Refer to the glossary of study designs (appendix D) and the algorithm for classifying experimental and observational study designs (appendix E) to best describe the paper's underpinning study design		
<b>Guidance topic:</b>		
<b>Assessed by:</b>		
<b>Section 1: Population</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>1.1</b> Is the source population or source area well described? Was the country (e.g. developed or non-developed, type of healthcare system), setting (primary schools, community centres etc.), location (urban, rural), population demographics etc. adequately described?		
<b>1.2</b> Is the eligible population or area representative of the source population or area? Was the recruitment of individuals, clusters or areas well defined (e.g. advertisement, birth register)? Was the eligible population representative of the source? Were important groups under-represented?		
<b>1.3</b> Do the selected participants or areas represent the eligible population or area? Was the method of selection of participants from the eligible population well described? What % of selected individuals or clusters agreed to participate? Were there any sources of bias? Were the inclusion or exclusion criteria explicit and appropriate?		

Section 2: Method of allocation to intervention (or comparison)	Rating (++ + - NR N/A)	Comments
<p><b>2.1 Allocation to intervention (or comparison).</b>            How was selection bias minimised?            Was allocation to exposure and comparison randomised? Was it truly random ++ or pseudo-randomised + (e.g. consecutive admissions)?            If not randomised, was significant confounding likely (-) or not (+)?            If a cross-over, was order of intervention randomised?</p>		
<p><b>2.2 Were interventions (and comparisons) well described and appropriate?</b>            Were interventions and comparisons described in sufficient detail (i.e. enough for study to be replicated)?            Were comparisons appropriate (e.g. usual practice rather than no intervention)?</p>		
<p><b>2.3 Was the allocation concealed?</b>            Could the person(s) determining allocation of participants or clusters to intervention or comparison groups have influenced the allocation?            Adequate allocation concealment (++) would include centralised allocation or computerised allocation systems</p>		
<p><b>2.4 Were participants or investigators blind to exposure and comparison?</b>            Were participants and investigators – those delivering or assessing the intervention kept blind to intervention allocation? (Triple or double blinding score ++)            If lack of blinding is likely to cause important bias, score -</p>		
<p><b>2.5 Was the exposure to the intervention and comparison adequate?</b>            Is reduced exposure to intervention or control related to the intervention (e.g. adverse effects leading to reduced compliance) or fidelity of implementation (e.g. reduced adherence to protocol)?            Was lack of exposure sufficient to cause important bias?</p>		

<p><b>2.6</b> Was contamination acceptably low?        Did any in the comparison group receive the intervention or vice versa?        If so, was it sufficient to cause important bias?        If a cross-over trial, was there a sufficient wash-out period between interventions?</p>		
<p><b>2.7</b> Were other interventions similar in both groups?        Did either group receive additional interventions or have services provided in a different manner?        Were the groups treated equally by researchers or other professionals?        Was this sufficient to cause important bias?</p>		
<p><b>2.8</b> Were all participants accounted for at study conclusion?        Were those lost-to-follow-up (i.e. dropped or lost pre-, during or postintervention) acceptably low (i.e. typically &lt;20%)?        Did the proportion dropped differ by group? For example, were drop-outs related to the adverse effects of the intervention?</p>		
<p><b>2.9</b> Did the setting reflect usual UK practice?        Did the setting in which the intervention or comparison was delivered differ significantly from usual practice in the UK? For example, did participants receive intervention (or comparison) condition in a hospital rather than a community-based setting?</p>		
<p><b>2.10</b> Did the intervention or control comparison reflect usual UK practice?        Did the intervention or comparison differ significantly from usual practice in the UK? For example, did participants receive intervention (or comparison) delivered by specialists rather than GPs? Were participants monitored more closely?</p>		
Section 3: Outcomes	Rating (++ + - NR N/A)	Comments
<p><b>3.1</b> Were outcome measures reliable?        Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs self-reported smoking -)?        How reliable were outcome measures (e.g. inter- or intra-rater reliability scores)?        Was there any indication that measures had been validated (e.g. validated against a gold standard measure or assessed for content validity)?</p>		

<b>3.2</b> Were all outcome measurements complete? Were all or most study participants who met the defined study outcome definitions likely to have been identified?		
<b>3.3</b> Were all important outcomes assessed? Were all important benefits and harms assessed? Was it possible to determine the overall balance of benefits and harms of the intervention versus comparison?		
<b>3.4</b> Were outcomes relevant? Where surrogate outcome measures were used, did they measure what they set out to measure? (e.g. a study to assess impact on physical activity assesses gym membership – a potentially objective outcome measure – but is it a reliable predictor of physical activity?)		
<b>3.5</b> Were there similar follow-up times in exposure and comparison groups? If groups are followed for different lengths of time, then more events are likely to occur in the group followed-up for longer distorting the comparison. Analyses can be adjusted to allow for differences in length of follow-up (e.g. using person-years).		
<b>3.6</b> Was follow-up time meaningful? Was follow-up long enough to assess long-term benefits or harms? Was it too long, e.g. participants lost to follow-up?		
<b>Section 4: Analyses</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>4.1</b> Were exposure and comparison groups similar at baseline? If not, were these adjusted? Were there any differences between groups in important confounders at baseline? If so, were these adjusted for in the analyses (e.g. multivariate analyses or stratification). Were there likely to be any residual differences of relevance?		

<p><b>4.2</b> Was intention to treat (ITT) analysis conducted? Were all participants (including those that dropped out or did not fully complete the intervention course) analysed in the groups (i.e. intervention or comparison) to which they were originally allocated?</p>		
<p><b>4.3</b> Was the study sufficiently powered to detect an intervention effect (if one exists)? A power of 0.8 (that is, it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard. Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate?</p>		
<p><b>4.4</b> Were the estimates of effect size given or calculable? Were effect estimates (e.g. relative risks, absolute risks) given or possible to calculate?</p>		
<p><b>4.5</b> Were the analytical methods appropriate? Were important differences in follow-up time and likely confounders adjusted for? If a cluster design, were analyses of sample size (and power), and effect size performed on clusters (and not individuals)? Were subgroup analyses pre-specified?</p>		
<p><b>4.6</b> Was the precision of intervention effects given or calculable? Were they meaningful? Were confidence intervals or p values for effect estimates given or possible to calculate? Were CI's wide or were they sufficiently precise to aid decision-making? If precision is lacking, is this because the study is under-powered?</p>		
<p><b>Section 5: Summary</b></p>	<p><b>Rating (++ + - NR N/A)</b></p>	<p><b>Comments</b></p>
<p><b>5.1</b> Are the study results internally valid (i.e. unbiased)? How well did the study minimise sources of bias (i.e. adjusting for potential confounders)? Were there significant flaws in the study design?</p>		

<p><b>5.2</b> Are the findings generalisable to the source population (i.e. externally valid)?</p> <p>Are there sufficient details given about the study to determine if the findings are generalisable to the source population? Consider: participants, interventions and comparisons, outcomes, resource and policy implications.</p>		
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### Quality Assessment Checklist for Non-Intervention Quantitative Studies

<b>Study identification:</b> (Include full citation details)		
<b>Study design:</b> Refer to the glossary of study designs (appendix D) and the algorithm for classifying experimental and observational study designs (appendix E) to best describe the paper's underpinning study design		
<b>Guidance topic:</b>		
<b>Assessed by:</b>		
<b>Section 1: Population</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>1.1</b> Is the source population or source area well described? Was the country (e.g. developed or non-developed, type of healthcare system), setting (primary schools, community centres etc.), location (urban, rural), population demographics etc. adequately described?		
<b>1.2</b> Is the eligible population or area representative of the source population or area? Was the recruitment of individuals, clusters or areas well defined (e.g. advertisement, birth register)? Was the eligible population representative of the source? Were important groups under-represented?		
<b>1.3</b> Do the selected participants or areas represent the eligible population or area? Was the method of selection of participants from the eligible population well described? What % of selected individuals or clusters agreed to participate? Were there any sources of bias? Were the inclusion or exclusion criteria explicit and appropriate?		
<b>Section 2: Method of allocation to intervention (or comparison)</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>2.1</b> Selection of exposure (and comparison) group. How was selection bias minimised? How was selection bias minimised?		
<b>2.2</b> Was the selection of explanatory variables based on a sound theoretical basis? How sound was the theoretical basis for selecting the explanatory variables?		
<b>2.3</b> Was the contamination acceptably low? Did any in the comparison group receive the exposure? If so, was it sufficient to cause important bias?		

<b>2.4</b> How well were likely confounding factors identified and controlled? Were there likely to be other confounding factors not considered or appropriately adjusted for? Was this sufficient to cause important bias?		
<b>Section 3: Outcomes</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>3.1</b> Were outcome measures and procedures reliable? Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs self-reported smoking -)? How reliable were outcome measures (e.g. inter- or intra-rater reliability scores)? Was there any indication that measures had been validated (e.g. validated against a gold standard measure or assessed for content validity)?		
<b>3.2</b> Were all outcome measurements complete? Were all or most study participants who met the defined study outcome definitions likely to have been identified?		
<b>3.3</b> Were all important outcomes assessed? Were all important benefits and harms assessed? Was it possible to determine the overall balance of benefits and harms of the intervention versus comparison?		
<b>3.4</b> Was there a similar follow-up time in exposure and comparison groups? If groups are followed for different lengths of time, then more events are likely to occur in the group followed-up for longer distorting the comparison. Analyses can be adjusted to allow for differences in length of follow-up (e.g. using person-years).		
<b>3.5</b> Was follow-up time meaningful? Was follow-up long enough to assess long-term benefits or harms? Was it too long, e.g. participants lost to follow-up?		
<b>Section 4: Analyses</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>4.1</b> Was the study sufficiently powered to detect an intervention effect (if one exists)? A power of 0.8 (that is, it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard. Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate?		
<b>4.2</b> Were multiple explanatory variables considered in the analyses? Was there sufficient explanatory variables considered in the analysis?		
<b>4.3</b> Were the analytical methods appropriate? Were important differences in follow-up time and likely confounders adjusted for?		

<p><b>4.4</b> Was the precision of association given or calculable? Is association meaningful? Were confidence intervals or p values for effect estimates given or possible to calculate? Were CIs wide or were they sufficiently precise to aid decision-making? If precision is lacking, is this because the study is under-powered?</p>		
<p><b>Section 5: Summary</b></p>	<p><b>Rating (++ + - NR N/A)</b></p>	<p><b>Comments</b></p>
<p><b>5.1</b> Are the study results internally valid (i.e. unbiased)? How well did the study minimise sources of bias (i.e. adjusting for potential confounders)? Were there significant flaws in the study design?</p>		
<p><b>5.2</b> Are the findings generalisable to the source population (i.e. externally valid)? Are there sufficient details given about the study to determine if the findings are generalisable to the source population? Consider: participants, interventions and comparisons, outcomes, resource and policy implications.</p>		

### Quality Assessment Checklist for Qualitative Studies

<b>Study identification:</b> (Include full citation details)		
<b>Study design:</b> Refer to the glossary of study designs (appendix D) and the algorithm for classifying experimental and observational study designs (appendix E) to best describe the paper's underpinning study design		
<b>Guidance topic:</b>		
<b>Assessed by:</b>		
<b>Section 1: Theoretical Approach</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>1.1</b> Is a qualitative approach appropriate? For example:  Does the research question seek to understand processes or structures, or illuminate subjective experiences or meanings? Could a quantitative approach better have addressed the research question?  [Appropriate / Inappropriate / Not sure]		
<b>1.2</b> Is the study clear in what it seeks to do?  For example:  Is the purpose of the study discussed - aims/objectives/research question/s?  Is there adequate/appropriate reference to the literature?  Are underpinning values/assumptions/theory discussed?  [Clear / Unclear / Mixed]		
<b>Section 2: Study Design</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<b>2.1</b> How defensible/rigorous is the research design/methodology? For example:  Is the design appropriate to the research question? Is a rationale given for using a qualitative approach? Are there clear accounts of the rationale/justification for the sampling, data collection and data analysis techniques used?  Is the selection of cases/sampling strategy theoretically justified?  [Defensible / Indefensible / Not sure]		

<b>Section 3: Data collection</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<p><b>3.1</b> How well was the data collection carried out?</p> <p>For example:</p> <p>Are the data collection methods clearly described?</p> <p>Were appropriate data collected to address the research question?</p> <p>Was the data collection and record keeping systematic?</p> <p>[Appropriately / Inappropriately / Not sure or inadequately reported]</p>		
<b>Section 4. Trustworthiness</b>	<b>Rating (++ + - NR N/A)</b>	<b>Comments</b>
<p><b>4.1</b> Is the role of the researcher clearly described?</p> <p>For example:</p> <p>Has the relationship between the researcher and the participants been adequately considered?</p> <p>Does the paper describe how the research was explained and presented to the participants?</p> <p>[Clearly described / Unclear / Not described]</p>		
<p><b>4.2</b> Is the context clearly described?</p> <p>For example:</p> <p>Are the characteristics of the participants and settings clearly defined?</p> <p>Were observations made in a sufficient variety of circumstances?</p> <p>Was the context bias considered?</p> <p>[Clear / Unclear / Not sure]</p>		
<p><b>4.3</b> Were the methods reliable?</p> <p>For example:</p> <p>Was data collected by more than 1 method?</p> <p>Is there justification for triangulation, or for not triangulating?</p> <p>Do the methods investigate what they claim to?</p> <p>[Reliable / Unreliable / Not sure]</p>		

Section 5: Analyses	Rating (++ + - NR N/A)	Comments
<p><b>5.1</b> Is the data analysis sufficiently rigorous?</p> <p>For example:</p> <p>Is the procedure explicit - i.e. is it clear how the data was analysed to arrive at the results?</p> <p>How systematic is the analysis, is the procedure reliable/dependable?</p> <p>Is it clear how the themes and concepts were derived from the data?</p> <p>[Rigorous / Not rigorous / Not sure or not reported]</p>		
<p><b>5.2</b> Is the data rich?</p> <p>For example:</p> <p>How well are the contexts of the data described?</p> <p>Has the diversity of perspective and content been explored?</p> <p>How well has the detail and depth been demonstrated?</p> <p>Are responses compared and contrasted across groups/sites?</p> <p>[Rich / Poor / Not sure or not reported]</p>		
<p><b>5.3</b> Is the analysis reliable?</p> <p>For example:</p> <p>Did more than one researcher theme and code transcripts/data?</p> <p>Is so, how were differences resolved?</p> <p>Did participants feed back on the transcripts/data if possible and relevant?</p> <p>Were negative/discrepant results addressed or ignored?</p> <p>[Reliable / Unreliable / Not sure or not reported]</p>		
<p><b>5.4</b> Are findings convincing?</p> <p>For example:</p> <p>Are the findings clearly presented?</p> <p>Are the findings internally coherent?</p> <p>Are extracts from the original data included?</p> <p>Are the data appropriately referenced?</p> <p>Is the reporting clear and coherent?</p> <p>[Convincing / Not convincing / Not sure]</p>		
<p><b>5.5</b> Are the findings relevant to the aims of the study?</p> <p>[Relevant / Irrelevant / Partially relevant]</p>		

<p><b>5.6 Conclusions</b></p> <p>For example:</p> <p>How clear are the links between data. Interpretation and conclusions?</p> <p>Are the conclusions plausible and coherent?</p> <p>Have alternative explanations been explored and discounted?</p> <p>Does this enhance understanding of the research topic?</p> <p>Are the implications of the research clearly defined?</p> <p>Is there adequate discussion of any limitations encountered?</p> <p>[Adequate / Inadequate / Not sure]</p>		
<p><b>Section 6: Ethics</b></p> <p><b>6.1 How clear and coherent is the reporting of ethics?</b></p> <p>For example:</p> <p>Have ethical issues been taken into consideration?</p> <p>Are they adequately discussed e.g. do they address consent and anonymity? Have the consequences of the research been considered i.e. raising expectations, changing behaviour?</p> <p>Was the study approved by an ethics committee?</p> <p>[Appropriate / Inappropriate / Not sure or not reported]</p>	<p><b>Rating (++ + - NR N/A)</b></p>	<p><b>Comments</b></p>
<p><b>Section 7: Overall Assessment</b></p> <p>As far as can be ascertained from the paper, how well was the study conducted?</p> <p>Grade according to:</p> <ul style="list-style-type: none"> <li>++ All or most of the checklist criteria have been fulfilled, where they have not been fulfilled the conclusions are very unlikely to alter.</li> <li>+ Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter.</li> <li>- Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter</li> </ul>	<p><b>Rating (++ + - NR N/A)</b></p>	<p><b>Comments</b></p>

## Appendix C Details of Excluded Studies

Ramos-Gomez F. (2012) Early Maternal Exposure to Children's Oral Health may be Correlated with Lower Early Childhood Caries Prevalence in Their Children. <i>Journal of Evidence-Based Dental Practice</i> . 12: p. 29-31.	Review of the study, not the actual study
Almomani, F., et al., Effects of an oral health promotion program in people with mental illness. <i>Journal of Dental Research</i> , 2009. 88(7): p. 648-52.	Not in Dental practice setting
Anderson, R., E.T. Treasure, and A.S. Sprod, Oral health promotion practice: A survey of dental professionals in Wales. <i>International Journal of Health Promotion and Education</i> , 2002. 40(1): p. 9-14.	provides general information on percentage of advice are given but nothing about effectiveness and barriers/facilitators
Arora, A., et al., 'English leaflets are not meant for me': a qualitative approach to explore oral health literacy in Chinese mothers in Southwestern Sydney, Australia. <i>Community Dentistry and Oral Epidemiology</i> , 2012. 40(6): p. 532-541.	Not in a dental practice setting
Bolden, A.J. and H.L. Logan, Differences in judgments of persuasive argument quality by three population groups in Iowa. <i>Journal of Public Health Dentistry</i> , 1995. 55(1): p. 18-21.	Not in a dental practice
Brand, V., et al., Impact of single-session motivational interviewing on clinical outcomes following periodontal maintenance therapy. <i>International Journal of Dental Hygiene</i> , 2013. 11(2): p. 134-141.	Not in a dental practice setting – academic health centre dental clinic
Buglar, M.E., K.M. White, and N.G. Robinson, The role of self-efficacy in dental patients' brushing and flossing: Testing an extended Health Belief Model. <i>Patient Education and Counseling</i> , 2010. 78(2): p. 269-272.	Not an oral health promotion intervention
Cibulka, N.J., et al., Improving oral health in low-income pregnant women with a nurse practitioner-directed oral care program. <i>Journal of the American Academy of Nurse Practitioners</i> , 2011. 23(5): p. 249-257.	Not in a dental practice setting
Clarkson, J.E., et al., IQuaD dental trial; improving the quality of dentistry: a multicentre randomised controlled trial comparing oral hygiene advice and periodontal instrumentation for the prevention and management of periodontal disease in dentate adults attending dental primary care. <i>BMC Oral Health</i> , 2013. 13: p. 58.	Study protocol - not full trial – no outcomes reported

Cornell, P.J., S. Richards, and S. Westlake, Does informing patients about the link between dental hygiene and rheumatoid arthritis encourage better dental care? <i>Arthritis and Rheumatism</i> , 2011. 1).	Not in a dental practice setting
Cornell, T., S.L. Westlake, and S. Richards, Does informing patients about the link between gum disease and rheumatoid arthritis encourage better dental care? <i>Rheumatology (United Kingdom)</i> , 2012. 51: p. iii62.	Not in a dental practice setting
Craven, R.C., A.S. Blinkhorn, and L. Schou, A campaign encouraging dental attendance among adolescents in Scotland: the barriers to behaviour change. <i>Community Dental Health</i> , 1994. 11(3): p. 131-4.	Campaign is not in a dental setting (in schools)
DeBate, R.D., et al., Evaluate, assess, treat: development and evaluation of the EAT framework to increase effective communication regarding sensitive oral-systemic health issues. <i>Eur J Dent Educ</i> , 2012. 16(4): p. 232-8.	Evaluation of an intervention for dental students education
Dela Cruz, A., et al., A community-based randomised trial of postcard mailings to increase dental utilization among low-income children. <i>Journal of Dentistry for Children (Chicago, Ill.)</i> , 2012. 79(3): p. 154-8.	Not in a dental practice setting
Dermen, K.H., S.G. Ciancio, and J.A. Fabiano, A pilot test of motivational oral health promotion with alcohol-dependent inpatients. <i>Health Psychology</i> , 2014. 33(4): p. 392-5.	Not in a dental setting.
Doherty, S.A. and F.C. Fielder, The effects of health education on patients' subsequent dental visits: a practice-based research in health promotions. <i>African Dental Journal</i> , 1995. 9: p. 9-14.	Intervention is not delivered by dental staff
Dyer, T.A. and P.G. Robinson, General health promotion in general dental practice--the involvement of the dental team. Part 1: a review of the evidence of effectiveness of brief public health interventions. <i>British Dental Journal</i> , 2006. 200(12): p. 679-85; discussion 671.	Literature review
Ekbäck, G., C. Persson, and S. Ordell, How much information is remembered by the patients? A selective study related to health education on a Swedish public health survey. <i>Swedish Dental Journal</i> , 2012. 36(3): p. 143-148.	Not about the effectiveness of Health promotion messages – its rather about whether different groups are more likely to have received health promotion messages than others.
Farias, D.G., et al., Effect of oral anticipatory guidance on oral health and oral hygiene practices in preschool children. <i>Journal of Clinical Pediatric Dentistry</i> , 2005. 30(1): p. 23-7.	Not in a dental practice setting

Ferrazzano, G.F., et al., Effectiveness of a motivation method on the oral hygiene of children. European Journal of Paediatric Dentistry, 2008. 9(4): p. 183-7.	Not in a dental practice setting
Finkler, M., D.M. Belliard Oleiniski, and F.R. Souza Ramos, Pregnant women's social representations of oral health: A reference to rethink mother-baby dental assistance. Online Brazilian Journal of Nursing, 2005. 4(2): p. 11DUMMY.	Full text not available
Furusawa, M., et al., Effectiveness of dental checkups incorporating tooth brushing instruction. Bulletin of Tokyo Dental College, 2011. 52(3): p. 129-33.	Not in a dental practice
Greenberg, B.J.S., J.V. Kumar, and H. Stevenson, Dental case management: Increasing access to oral health care for families and children with low incomes. Journal of the American Dental Association, 2008. 139(8): p. 1114-1121.	Not in a dental setting
Griffiths, J., Patients' perception of, and compliance with, oral hygiene instruction in a general dental practice. Dental Health, 2002. 41(3): p. 3-6.	Doesn't provide information on barriers or facilitators or effectiveness of intervention
Hajimiri, K.H., G.H. Sharifirad, and A. Hasanzade, The effect of oral health education based on health belief model in mothers who had 3-6 year old children on decreasing dental plaque index in Zanjan. Journal of Zanjan University of Medical Sciences and Health Services, 2010. 18(72): p. 1p.	Full text not available
Hale, N.A., Community-based dental health education in the Philippines. Journal of Investigative Medicine, 2011. 59 (1): p. 139-140.	Only abstract available - meeting paper not full text
Harn, S.D. and D.G. Dunning, Using a children's dental health carnival as a primary vehicle to educate children about oral health. Journal of Dentistry for Children, 1996. 63(4): p. 281-4.	Not in a dental clinic
Harris, R., et al., One-to-one dietary interventions undertaken in a dental setting to change dietary behaviour. Cochrane Database of Systematic Reviews, 2012. 3: p. CD006540.	Systematic review
Hedman, E., K. Ringberg, and P. Gabre, Oral health education for schoolchildren: a qualitative study of dental care professionals' view of knowledge and learning. International Journal of Dental Hygiene, 2009. 7(3): p. 204-11.	Not in a dental practice setting

Horowitz, A.M., M.Q. Wang, and D.V. Kleinman, Opinions of Maryland adults regarding communication practices of dentists and staff. <i>Journal of Health Communication</i> , 2012. 17(10): p. 1204-1214.	The outcomes are not relevant
Houmes, S., Dental cavity prevention through fluoride education in Sandpoint, Idaho. <i>Journal of Investigative Medicine</i> , 2012. 60 (1): p. 151.	Only abstract available meeting paper not full text
Jones, L.M. and T.J. Huggins, The rationale and pilot study of a new paediatric dental patient request form to improve communication and outcomes of dental appointments. <i>Child: Care, Health and Development</i> , 2013. 39(6): p. 869-872.	Not in a dental practice setting / not about a health promotion message
Katz-Sagi, H., et al., Effects of frequent oral hygiene instructions on microbial levels and salivary buffer capacity in orthodontic patients and their parents. <i>World Journal of Orthodontics</i> , 2008. 9(4): p. e48-54.	Took place in a university dental clinic
Kitching, M., V. Roos, and A. Nienaber, Educational psychology theory and the promotion of dental care for children aged five to six. <i>Journal of Psychology in Africa</i> , 2010. 20(2): p. 299-308.	Not in a dental practice setting
Knösel, M., K. Jung, and A. Bleckmann, YouTube, dentistry, and dental education. <i>Journal Of Dental Education</i> , 2011. 75(12): p. 1558-1568.	Not relevant – and not in a dental practice setting
Laiho, M., E. Honkala, and L. Kannas, How is oral health education conducted in Finnish health centers? <i>Community Dentistry and Oral Epidemiology</i> , 1995. 23(2): p. 119-24.	provides survey information on prevalence of certain behaviours rather than barriers and facilitators on implementing oral health messages
Lawrence, A., Dental health educators in general practice have small impact. <i>Evidence-Based Dentistry</i> , 2004. 5(1): p. 15.	Commentary not study - the study is included (Blinkhorn et al)
Makuch, A. and K. Reschke, Playing games in promoting childhood dental health. <i>Patient Education and Counseling</i> , 2001. 43(1): p. 105-110.	Not a dental practice setting
Marino, R.J., et al., Cost-minimization analysis of a tailored oral health intervention designed for immigrant older adults. <i>Geriatrics and gerontology international</i> , 2014. 14(2): p. 336-40.	Setting: community groups and dental hospital

Martignon, S., et al. Oral-health workshop targeted at 0-5-yr. old deprived children's parents and caregivers: effect on knowledge and practices. <i>Journal of clinical pediatric dentistry</i> , 2006. 31, 104-8	Not in a dental practice setting
Mayer, M.P., et al. Long-term effect of an oral hygiene training program on knowledge and reported behaviour. <i>Oral health and preventive dentistry</i> , 2003. 1, 37-43.	Not in a dental practice setting
McConaughy, F.L., S.E. Toevs, and K.M. Lukken, Adult clients' recall of oral health education services received in private practice. <i>Journal of Dental Hygiene</i> , 1995. 69(5): p. 202-11.	Not in a dental practice setting.
Misra, S., et al., Dentist-patient communication: What do patients and dentists remember following a consultation? Implications for patient compliance. <i>Patient Preference and Adherence</i> , 2013. 7: p. 543-549.	Limited relation to health messages
Mun, S.J., et al., Reduction in dental plaque in patients with mental disorders through the dental hygiene care programme. <i>International Journal of Dental Hygiene</i> , 2014. 12(2): p. 133-40.	Not in a dental practice setting
Murphy, M., et al., Considerations and lessons learned from designing a motivational interviewing obesity intervention for young people attending dental practices: a study protocol paper. <i>Contemp Clin Trials</i> , 2013. 36(1): p. 126-34.	Study protocol - not full trial – no outcomes reported
Newton, J.T., The readability and utility of general dental practice patient information leaflets: an evaluation. <i>British Dental Journal</i> , 1995. 178(9): p. 329-32.	Article is about NHS leaflets which provide professional details about dentists at surgeries rather than oral health messages. Also the outcome is a readable leaflet and not any change in peoples' knowledge or attitude.
Nishimura, M., et al., Influences of diet on caries activities and caries-risk grouping in children, and changes in parenting behaviour. <i>Pediatric Dental Journal</i> , 2012. 22(2): p. 117-124.	Public Health initiative as opposed to a practice based intervention.
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Pilebro, C. and B. Bäckman, Teaching oral hygiene to children with autism. International Journal Of Paediatric Dentistry / The British Paedodontic Society [And] The International Association Of Dentistry For Children, 2005. 15(1): p. 1-9.	Not in Dental practice setting
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Plutzer, K. and A.J. Spencer, Efficacy of an oral health promotion intervention in the prevention of early childhood caries. Community Dentistry and Oral Epidemiology, 2008. 36(4): p. 335-46.	Not in a dental practice setting
Primosch, R.E., C.M. Balsewich, and C.W. Thomas, Outcomes assessment an intervention strategy to improve parental compliance to follow-up evaluations after treatment of early childhood caries using general anesthesia in a Medicaid population. Journal of Dentistry for Children, 2001. 68(2): p. 102-8, 80.	Not in a conventional dental practice
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Rantanen, M., et al., Dental patient education: a survey from the perspective of dental hygienists. International Journal Of Dental Hygiene, 2010. 8(2): p. 121-127.	Provides general information on percentage of advice are given but nothing about effectiveness and barriers/facilitators
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Richards, W., Evaluating oral health promotion activity within a general dental practice. British Dental Journal, 2013. 215(2): p. 87-91.	Not applicable - Focuses on oral health behaviours rather than messages in particular
Rodrigues, C.R., et al., The effect of training on the ability of children to use dental floss. ASDC Journal Of Dentistry For Children, 1996. 63(1): p. 39-41.	Not in a dental practice setting
Rosseel, J.P., et al., Patient-reported feedback promotes delivery of smoking cessation advice by dental professionals. International Journal of Health Promotion and Education, 2012. 50(3): p. 101-110.	Smoking cessation

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Sallam, A.a.M., S.B.Y. Badr, and M.A. Rashed, Effectiveness of audiovisual modeling on the behavioural change toward oral and dental care in children with autism. Indian Journal of Dentistry, 2013. 4(4): p. 184-190.	Not in a dental practice
Särner, B., et al., Recommendations by dental staff and use of toothpicks, dental floss and interdental brushes for approximal cleaning in an adult Swedish population. Oral Health and Preventive Dentistry, 2010. 8(2): p. 185-194.	Provides general information on percentage of advice are given but nothing about effectiveness and barriers/facilitators
Schlueter, N., J. Klimek, and C. Ganss, Relationship between plaque score and video-monitored brushing performance after repeated instruction--a controlled, randomised clinical trial. Clin Oral Investig, 2013. 17(2): p. 659-67.	Intervention took place in a university dental clinic
Schlueter, N., et al., Adoption of a toothbrushing technique: a controlled, randomised clinical trial. Clin Oral Investig, 2010. 14(1): p. 99-106.	Intervention took place in a university dental clinic
Schmiege, S.J., W.M.P. Klein, and A.D. Bryan, The effect of peer comparison information in the context of expert recommendations on risk perceptions and subsequent behaviour. European Journal of Social Psychology, 2010. 40(5): p. 746-759.	Not in a dental practice setting
Schoonheim-Klein, M., C. Gresnigt, and U. van der Velden, Influence of dental education in motivational interviewing on the efficacy of interventions for smoking cessation. European Journal of Dental Education, 2013. 17(1): p. e28-33.	About the education of dental students and subject area is smoking cessation
Schou, L. and C. Wight, Does dental health education affect inequalities in dental health? Community Dental Health, 1994. 11(2): p. 97-100.	Not in a dental practice setting
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Sharma, R., et al. Mobile-phone text messaging (SMS) for providing oral health education to mothers of preschool children in Belgaum City. Journal of telemedicine and telecare, 2011. 17, 432-6	Not in a dental practice setting

Sherman, D.K., J.A. Updegraff, and T. Mann, Improving oral health behaviour: a social psychological approach. <i>Journal of the American Dental Association</i> , 2008. 139(10): p. 1382-7.	Not in a dental setting, review of previous studies
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Syrjälä, A.M., M.L. Knuutila, and L.K. Syrjälä, Self-efficacy perceptions in oral health behaviour. <i>Acta Odontologica Scandinavica</i> , 2001. 59(1): p. 1-6.	Took place in a university dental clinic
Tam, M.L., Early childhood caries prevention in Hardin, Montana: Patient education, "first tooth. First exam," and fluoride varnish. <i>Journal of Investigative Medicine</i> , 2014. 62 (1): p. 247.	Only abstract available – meeting paper not full text
Tilliss, T.S.I., et al., The Transtheoretical Model applied to an oral self-care behavioural change: development and testing of instruments for stages of change and decisional balance. <i>Journal of Dental Hygiene</i> , 2003. 77(1): p. 16-25.	Article is about behavioural change rather than oral health promotion messages
Weinstein, P., Provider versus patient-centered approaches to health promotion with parents of young children: what works/does not work and why. <i>Pediatric dentistry</i> , 2006. 28(2): p. 172-176; discussion 192-198.	Not a study - a review
Wendt, L.K., G. Koch, and A.L. Hallonsten, Parental awareness of dental caries in toddlers. <i>Swedish Dental Journal</i> , 1996. 20(4): p. 161-4.	Not delivered in a dental practice
Wennhall, I., et al., Outcome of an oral health outreach programme for preschool children in a low socioeconomic multicultural area. <i>International Journal Of Paediatric Dentistry / The British Paedodontic Society [And] The International Association Of Dentistry For Children</i> , 2008. 18(2): p. 84-90.	Not in a dental practice setting
Yokoyama, Y., et al., Dentists' practice patterns regarding caries prevention: Results from a dental practice-based research network. <i>BMJ Open</i> , 2013. 3(9).	Provides general information on percentage of advice are given but nothing about effectiveness and barriers/facilitators
Mongeau, S. W. Horowitz, A. M., Assessment of Reading Level and Content Adequacy of Oral Cancer Educational Materials from USAF Dental Clinics. <i>Journal of Cancer Education</i> , 2004. 19(1): pp.29-36.	Not an oral health promotion intervention with a patient outcome. A review of material/information

Bailit, H., et al., Financial issues in community-based clinical dental education programs. Journal of Dental Education, 1999. 63(12): p. 902-8.	Not about oral health promotion messages - not relevant.
Cooper, B.R., Patient education software: technology in the dental office. Dental assistant 2007. 76(3): p. 16-17.	Not a study
O'Farrell, M., Developing oral health promotion in general dental practice in East London. British dental nurses' journal 1996. 55(4): p. 17-18.	No relevant outcomes
Massotto, M., Handling broken appointments, low case acceptance, and high stress through patient education. J N J Dent Assoc, 2006. 77(2): p. 17-8.	Not a study
Weinstein, P., et al., Treatment fidelity of brief motivational interviewing and health education in a randomised clinical trial to promote dental attendance of low-income mothers and children: Community-Based Intergenerational Oral Health Study "Baby Smiles". BMC Oral Health, 2014. 14(1): p. 1-16.	Not in a dental practice setting
Ueno, M., et al., Effects of an oral health education program targeting oral malodor prevention in Japanese senior high school students. Acta Odontologica Scandinavica, 2012. 70(5): p. 426-431.	Full text not available
Jain, C., et al., Randomised controlled trial: parental compliance with instructions to remain silent in the dental operatory. Pediatric Dentistry, 2013. 35(1): p. 47-51.	Not about oral health promotion messages
Harnacke, D., et al., Oral and written instruction of oral hygiene: a randomised trial. Journal of Periodontology, 2012. 83(10): p. 1206-1212.	Not in a dental practice
Esfahanizadeh, N., Dental health education programme for 6-year-olds: a cluster randomised controlled trial. European Journal of Paediatric Dentistry, 2011. 12(3): p. 167-170.	Not in a dental practice
Gathece, L.W., et al., Effect of health education on oral hygiene and gingival status of persons living with HIV attending comprehensive care centres in Nairobi, Kenya. African Journal of AIDS Research (AJAR), 2011. 10(4): p. 495-500.	Not in a dental practice setting

Roberts-Thomson, K.F., et al., A comprehensive approach to health promotion for the reduction of dental caries in remote Indigenous Australian children: a clustered randomised controlled trial. International Dental Journal, 2010. 60(3 Suppl 2): p. 245-249.	Not in a dental practice
Cardenas, L.M. and D.D. Ross, Effects of an oral health education program for pregnant women. Journal of the Tennessee Dental Association, 2010. 90(2): p. 23-27.	Distributing educational information to prenatal clinics
Ribeiro, D.G., et al., Effect of oral hygiene education and motivation on removable partial denture wearers: longitudinal study. Gerodontology, 2009. 26(2): p. 150-156.	Not in a dental practice
Blinkhorn, F., et al., A phase II clinical trial of a dental health education program delivered by aboriginal health workers to prevent early childhood caries. BMC Public Health, 2012. 12: p. 681-681.	Study protocol
DiClemente, R.J., Planning models are critical for facilitating the development, implementation, and evaluation of dental health promotion interventions. Journal of Public Health Dentistry, 2011. 71: p. S16-S16.	Not a study
For the dental patient... Surfing for substance: evaluating oral health information on the Internet. Journal of the American Dental Association (JADA), 2006. 137(5): p. 692-692.	Not a study – A leaflet
Bruerd, B., Focus groups: evaluating oral health education materials. Dental Hygienist News, 1995. 8(2): p. 21-22.	Full text not available
Lembariti, B. S., van der Weijden, G. A. and van Palenstein Helderman, W. H. (1998), The effect of a single scaling with or without oral hygiene instruction on gingival bleeding and calculus formation. Journal of Clinical Periodontology, 25: 30-33.	Mentions schools rather than dental practice
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Strippel, H. (2010) Effectiveness of structured comprehensive paediatric oral health education for parents of children less than two years of age in Germany. <i>Community dental health</i> , 27 (2), 74-80	Not in a dental practice
Freudenthal JJ; Bowen DM (2010 Winter) Motivational interviewing to decrease parental risk-related behaviours for early childhood caries.	Not a dental practice setting
Lee, J.Y., Divaris, K., Baker, A.D., Rozier, R.G., Vann, W.F. Jr. (2012) The Relationship of Oral Health Literacy and Self-Efficacy With Oral Health Status and Dental Neglect. <i>American Journal of Public Health</i> , May;102(5) 923-9	Population attending Women, Infants, and Children's clinic – not a dental practice setting
Vysniauskaite, S. and M.M. Vehkalahti, Professional guidance on and self-assessed knowledge of oral self-care as reported by dentate elderly patients in Lithuania. <i>Oral Health &amp; Preventive Dentistry</i> , 2007. 5(3): p. 193-9.	No relevant outcomes
Clayton, M., et al., An Initial, Qualitative Investigation of Patient-Centered Education in Dentistry. <i>Studies in Health Technology &amp; Informatics</i> , 2013. 183: p. 314-318.	No relevant outcomes
Ziebolz, D., et al., Individual versus group oral hygiene instruction for adults. <i>Oral Health &amp; Preventive Dentistry</i> , 2009. 7(1): p. 93-99.	Not in a dental practice setting
Davies, G.M., Duxbury, J.T., Boothman, N.J., Davies, R.M., Blinkhorn, A.S. (2005) A staged intervention dental health promotion programme to reduce early childhood caries. <i>Community dental health</i> , 22(2), 118-22	Not in a dental practice setting
Miller, P.M., Ravenel, M.C., Shealy, A.E., Thomas, S. (2006) Alcohol screening in dental patients: the prevalence of hazardous drinking and patients' attitudes about screening and advice. <i>Journal of the American Dental Association</i> , 137(12), 1692-8	Not in a dental practice setting
Sharma, R., Hebbel, M., Ankola, A.V., Murugabupathy, V. (2011) Mobile-phone text messaging (SMS) for providing oral health education to mothers of preschool children in Belgaum City. <i>Journal of telemedicine and telecare</i> , 17(8) 432-436	Not in a dental practice setting and duplicate
Dermen, K.H., Ciancio, S.G., Fabiano J.A. (2014) A pilot test of motivational oral health promotion with alcohol-dependent inpatients. <i>Health psychology: official journal of the Division of Health Psychology, American Psychological Association</i> , 33(4), 392-5	Not in a dental practice setting

## Appendix D Smoking Cessation Studies

Our search strategy revealed a considerable number of studies focussing on the delivery of smoking cessation advice. The majority of the smoking cessation studies identified were not specifically about promoting oral health per se. It was therefore decided, in consultation with the CPH team, that while we would endeavour to undertake a brief narrative synthesis, in order to be able to make a “state-of –the-art” statement about smoking cessation advice via dental surgeries, this would not be part of the main review.

A number of studies focused on the effectiveness of communicating messages about smoking cessation in a dental surgery environment (82 trials). Whilst screening these studies against the inclusion criteria, two studies clearly reported that these messages incorporated communication on the negative impact of smoking on oral health. These two studies therefore had outcomes relevant to the purpose of the main review, and so were included in it.<sup>1,2</sup> A further two studies<sup>4,5</sup> were excluded as one was unobtainable<sup>5</sup>, and the other did not meet our inclusion criteria<sup>6</sup> as it was a qualitative study identifying strategies to design a smoking cessation advice intervention.

The remaining studies focused predominantly on smoking cessation and smoking related outcomes. Most of the related randomised controlled trials up to 2011 had already been appraised and reviewed in a Cochrane review<sup>6</sup> on smoking cessation. That review concluded that behavioural interventions for tobacco cessation which incorporate an oral examination may increase tobacco abstinence rates among both cigarette smokers and smokeless tobacco users. A further Evidence Review also considered papers published before 2011<sup>7</sup> and reported randomised controlled trials and qualitative studies conducted in the UK. This review concluded that NHS practitioners felt that a lack of reimbursement from the NHS, a lack of time and training, and fears over patient response acted as barriers to delivering smoking cessation interventions. One article published in 2004<sup>3</sup> which was not included in the Cochrane Review, concerned the framing of oral health messages, in particular those targeted at quitting smoking. It was found that when presented with either positively- or negatively-framed messaged embedded in a brochure, significantly more brochures were taken if the message was positively-framed. The authors concluded that smokers were more receptive to information that emphasises the benefits of quitting. Four randomised controlled trials were identified which were published after the previous Cochrane review.<sup>8-11</sup> Three of these studies researched technology- assisted programmes. One study evaluated an e-system for referring smokers to a smoking cessation programme. It offered some evidence that the e-technology encouraged higher rates of cessation, however further studies are required to confirm this.<sup>10</sup> Another study evaluated computer-assisted guidance integrated in electronic patient records. The rates of smoking cessation were not measured.<sup>11</sup> These two studies would therefore have no effect on the conclusions drawn from the Cochrane review. However, the fourth study<sup>8</sup> evaluated interactive education combined with motivational emails to encourage dentists to deliver brief behavioural and smoking counselling. This behavioural intervention did not significantly decrease the rate of cessation.

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