Bazian

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Individual-Level Behaviour Change

External evidence review 3: A qualitative review of studies describing the characteristics and competencies needed for behaviour change interventions or techniques.

Evidence review for Public Health Guidance

Developed by Bazian for NICE

Contents

Abbreviations

ABI	Alcohol brief intervention
BC	Behaviour competency
BCT	Behaviour change technique(s)
BCT-C	Behaviour change technique cluster
BI	Brief intervention
CI	Confidence interval
CO	Carbon monoxide
IF	Intervention function
HBCC	The Health Behaviour Change Competency [Framework]
KSF	Knowledge and Skills Framework
MI	Motivational interviewing
MISC	Motivational Interviewing Skill Code
NICE	National Institute for Health and Clinical Excellence
NOS	National Occupational Standards are one output from this work and provide benchmarks of performance.
PHSCF	Public Health Skills and Career Framework
RCT	Randomised control trial
RR	Relative risk
RT	Referral to treatment
SBI	Screening and brief intervention
TTM	Trans-theoretical model

Glossary

Behaviour Change Intervention: Any form of intervention intended to help people change their behaviour. This may include regulation, financial incentives and information provision but also applies to social marketing, brief interventions and one to one support based on psychological concepts to optimise motivation and support behaviour change.

Brief Intervention: Usually refers to short (5-25 minutes) motivational interviews to support positive health choices including provision of literature and referral to specialist support services. This may be supported by screening to assess behavioural problems and social marketing to direct clients to services and to persuade and encourage professionals to deliver brief interventions.

Communities: Social or family groups linked by networks, geographical location or another common factor.

Competency: A quality or characteristic of a person that is related to effective performance. Competencies can be described as a combination of knowledge, skills, values, motives and personal traits. Competencies help individuals and their organisations look at how they do their jobs.

Competency framework: A collection of competencies thought to be central to effective performance. Development of competencies should help individuals to continually improve their performance and to work more effectively.

Counselling: A counsellor works with a client in a private and confidential setting to explore a difficulty the client is having or distress they may be experiencing. Counselling aims to see things from the client's point of view to clarify issues, perhaps from a different perspective. Counselling is a way of enabling choice or change or of reducing confusion. It doesn't involve giving advice or telling a client to take a particular course of action

Communication skills: These include skills in conveying information by words, letters, e-mail, body language, or messages. Skills in the interchange of thoughts, information, or opinions.

Core competencies: The minimum set of competencies that constitute a common baseline for all health roles.

Empathy: Means compassion, understanding, stepping into other's shoes. It is often mistakenly used in place of sympathy.

Motivational interviewing: Has been defined in several ways and the approach has evolved since originally described in 1983. For this report motivational Interviewing is not defined as a theory or technique but as an approach grounded in a patient centred stance that focuses on building rapport in the initial stages of the counselling relationship. Central concepts are resolving ambivalence and becoming attuned to "readiness for change" defined in stages.

National Occupational Standards: Developed for the health sector by Skills for Health and approved by the UK Commission for Employment and Skills, these describe the skills, knowledge and understanding needed to undertake a particular task or job to a nationally recognised level of competence. They focus on what the person needs to be able to do, as well as what they must know and understand to work effectively.

NHS Knowledge and Skills Framework (KSF): The development of this framework was linked to the implementation of the "agenda for change" was first developed by the Department of Health (DH 2004). It is designed to help individual professionals identify the knowledge and skills needed for their posts and to guide the professional development of individuals. It is designed to link to emerging competency frameworks and for use by the whole UK healthcare sector (including those outside the NHS).

Programmes: Multi-agency, multi-packages and/or a series of related policies, services and interventions or other actions focused on broad strategic issues.

They can involve a suite of activities that may be topic, setting or population based – and may involve changes to organisational infrastructures.

Self-efficacy: A person's estimate or personal judgment of his or her own ability to succeed in reaching a specific goal.

Stages of Change: a construct representing the temporal dimension of phases or steps through which individuals are believed to change (or not change) their behaviour, see transtheoretical model.

Transtheoretical Model of Change (TTM): A comprehensive framework that utilises various dimensions to understand behaviour change.

1 Executive Summary

Aims and Objectives

This review of qualitative studies aims to answer the research question “what are the characteristics and competencies required to deliver behaviour change interventions in those delivering behaviour change interventions?”

Methods

The review takes the approach of a thematic synthesis applying some techniques known as framework analysis. A search was conducted across 11 databases for qualitative literature published in English from 2003 onwards. A separate search of grey literature sources was undertaken for behaviour change manuals and frameworks. A broad range of study types (for example semi-structured interviews, focus groups, intervention studies and systematic reviews) were considered for the review and assessed using quality checklists. The published manuals describing how to deliver behaviour change interventions were retrieved and summarised. Descriptive categories of skill and training were developed from these manuals and the findings from the qualitative and selected quantitative literature were reported against these categories until conceptual saturation (no new concepts were being identified). Competency frameworks were used to develop analytical themes from these barriers and facilitator categories. Evidence statements reporting the qualitative literature were derived from this analysis.

This directed approach was adopted to infer meaning from a variety of primary data sources while retaining the essential concepts common to competency frameworks, namely a focus on skills and knowledge. The coding categories are derived directly from the text data and remain true to the underlying qualitative research. The techniques of framework analysis were employed to allow the contextual elements of what works and how competencies are currently classified to shape the report. As such the analytical themes begin with a theory, framework or relevant research findings and these are used as guidance for coding.

Findings

Thirty-five articles reporting qualitative and quantitative studies met inclusion criteria and are included. There were thirteen items of primary qualitative research looking at the experience of patients/clients and practitioners relating to the knowledge and skills required in delivering behaviour change interventions. Data was mainly collected by interview, focus group or video/audio tape recording of consultations. Eight intervention studies described some relevant skill or training characteristic of the provider of behaviour change intervention. Fourteen systematic reviews of studies reporting aspects of training or competencies required at a BCT level (Michie 2013) were included as these help to prioritise the important knowledge and skills for training based on evidence of what works. In some cases the systematic reviews also report how the skills in delivering specific combinations of BCTs together could enhance the effectiveness of interventions.

Discussion

The following **characteristics** were found to be valued by patients and when present were recognised as important by providers:

- Being supportive
- Being motivating
- Being empathetic

The following **knowledge** was recognised as a facilitator by providers (providers may mention the lack of these competencies as barriers to changing behaviour):

- Knowledge about conditions
- Knowledge about behaviour change and theories
- Knowledge about communication of information

The following **skills** were recognised as facilitators by providers (providers may mention the lack of these competencies as barriers to changing behaviour):

- Skills in assessing individuals
- Skills in referral and signposting support
- Skills in developing motivation and enabling action
- Skills in providing feedback
- Skills in delivering brief and very brief interventions
- Skills in action planning, goal setting and problem solving
- Skills in encouraging self-management
- Advanced skills for group counselling
- Advanced skills in maintaining change by making use of prompts and relapse prevention

Strengths

This thematic synthesis used a wide search for qualitative literature, it is part of a coherent set of reviews that use a shared BCT taxonomy (review 1 and review 2). Conceptual saturation in terms of the perception of barriers due to lack of skills, lack of time, lack of knowledge and fear of a negative patient reaction was reached early suggesting that there is reasonably strong agreement on the main themes across studies.

Detail of training required for specific interventions is offered in manuals and these provide a rich source of tools for assessing patients and information.

Existing frameworks list agreed competencies and these map well to most of those identified in this thematic synthesis. Skills for delivering group or remote interventions such as telephone counselling were exceptions that were not well covered by existing frameworks.

The underlying qualitative research was of good or moderate quality.

Limitations

The review does not include interventions that take a community or societal approach to behaviour change or those that predominantly use 'environmental' triggers to effect behaviour change. This may limit the applicability of this review to interventions that take a more multifactorial approach, use unselected populations or include environmental redesign.

Sexual health interventions, for example those that promote the use of condoms for preventing HIV or other infections were poorly represented in the search results. No evidence statements have been made relevant to this area.

As few studies were identified that assess competency directly or measure fidelity of delivery alongside quantitative results, it was not possible to directly infer how effective competence-based training might be in improving the uptake or success of behaviour change interventions. Those studies that did do this were assessing motivational interviewing for brief interventions targeting addictive behaviours (alcohol or smoking).

The terminology used in qualitative studies was not used consistently. Concepts such as motivation, self-efficacy and support appear to hold a different meaning for different researchers from different countries, making the applicability of some findings less direct. A common, agreed set of definitions for these concepts and for the behaviour change techniques described in research would help in any future specifications of competencies.

Patient experience has been captured in some qualitative research reported, but the search for this has not been exhaustive, it was included where it adds depth to the provider views of skills and training required.

Two additional competencies are poorly specified in qualitative research though adequately described in manuals and frameworks: skills in providing menus or choice in behaviour change techniques and skills in selecting behaviour change techniques for target behaviours.

Themes that were less well represented in the qualitative literature include the flexibility and adaptability needed to tailor BCTs and interventions to client needs, use of prompts and cues as specific BCTs and the competencies needed to deliver BCTs in a group setting such as those needed to maintain social cohesion within groups.

The review specifically looked for evidence relevant to groups that may need interventions tailored to suit their personal characteristics, for example, those with learning disability, physical disability or socioeconomic disadvantage. No qualitative studies describing views of how this should be done were identified.

Fear of damaging the patient relationship was an emotion expressed by some professionals as a barrier to initiating discussions on smoking cessation, for example. The skill to overcome this or to work with such resistance was not easily ascribed to a single competence or concept.

Conclusions

The need for training or skill in delivering specific behaviour techniques are expressed in the qualitative literature. Providing feedback, delivering action planning, goal setting, and problem solving are well represented and if effective for specific target areas, could be important focus for training.

The professional characteristics of those delivering interventions are those of professionalism (including being knowledgeable and being able to communicate information), being supportive, empathetic and motivating.

A focus on the specific skills required in developing motivation, promoting external support (social support cluster) from family, friends and others along with developing skills in fostering self-management and transitions out of programmes are also seen as valuable by providers.

2 Introduction

2.1 Scope

This is the third external evidence review commissioned by NICE to update public health guidance on behaviour change (PH6). It is a qualitative review of studies describing the knowledge and skills needs of those delivering effective behaviour change interventions or techniques at an individual level. The focus is on smoking, alcohol, diet, physical activity and sexual health behavioural targets. The knowledge or skills identified by professionals as important for delivering interventions to groups are included, however, interventions provided at a community or population level are not considered in this review.

An “individual-level behaviour change intervention” is defined as one where an individual is selected for an intervention on the basis of an existing health status (e.g. overweight) or behaviour (e.g. high alcohol consumption, smoking). The definition includes both health promotion and disease prevention interventions aimed at changing an individual’s behaviour.

Studies describing skills or training (competencies) or provider characteristics for delivering behaviour change interventions were included if they addressed one of the five behaviour topics within scope for this review. The findings are reported, where possible, in terms used by competency frameworks.

The overarching question that this review aims to answer is:

- What are the characteristics and competencies required to deliver behaviour change interventions in those delivering behaviour change interventions?

This is the third of three reviews:

Review 1 summarises the existing state of knowledge and guidance on behaviour change as described in current NICE public health guidance.

Review 2 is a systematic review that addresses questions regarding the effectiveness of the interventions, intervention functions and behaviour

change techniques included as components within these interventions. Review 2 takes a quantitative approach to assessing overall effectiveness and reports the associations of these design components with success along with the generalisability and applicability of these findings.

Review 3 takes a qualitative approach to the experience of professionals delivering these interventions and should be interpreted alongside the findings of the other two reviews. The review sets provider characteristics and competencies in the context of behavioural change interventions and the taxonomy for techniques (BCTs) described in review 1 and 2 (Michie 2013). Where reported in the primary studies identified, the review also reports the patients views of interventions and techniques, but no evidence statements have been derived from patient views alone.

Other barriers and facilitators to effective implementation of behaviour change interventions exist, for example environmental, workforce issues or societal attitudes, however this review only considers the barriers and facilitators relating to competencies and provider characteristics.

2.2 Competency and competency frameworks

Identifying and agreeing the core competencies for effective health promotion practice, education and training has been emphasised by others as being an essential component of developing and strengthening workforce capacity for delivering behaviour change interventions (Taub 2009).

The NHS Knowledge and skills framework

An understanding of the range of competencies required for delivering improvements in health and healthcare, including public health has led to a movement to develop cross-discipline frameworks listing generic and specialist knowledge or skills at several levels or points along a career path. For example, Skills for Health, a sector skills council with responsibility for setting standards to help deliver a skilled and flexible UK workforce, has collaborated with public health professional organisations across the UK to develop the Public Health Skills and Career Framework (PHSCF). This is

designed as a tool for individuals at any stage of their career to identify a pathway for developing their skills either in their current post or with future career in mind. National Occupational Standards (NOS) for the health sector are also developed by Skills for Health. The NHS Knowledge and Skills Framework (KSF) describes the knowledge and skills that NHS staff (except for doctors and dentists) need to apply in their work (DH 2004).

Three competency frameworks directed at specific behaviours were identified and included:

- NHS Health Scotland (2010) 'Delivery of alcohol brief interventions: A competency Framework'
- Dixon for NHS Scotland (2010) 'Health Behaviour Change Competency Framework: Competencies to deliver interventions to change lifestyle behaviours that affect health'
- Yorkshire and the Humber NHS (2010) 'Prevention and lifestyle behaviour change: A competence framework'

One framework describing competencies for motivational interviewing alone was identified:

- The Health Foundation (2011) 'Research scan: training professionals in motivational interviewing'

3 Methods

3.1 Approach

This qualitative review is a ‘thematic synthesis’ based on methods described and used by the EPPI-Centre, Social Science Research Unit in London (Thomas 2009). This is one of several approaches to the synthesis of qualitative research. In the context of the behaviour change interventions and targets, the method has been selected for its ability to provide evidence for understanding the experiences and point of view of those delivering interventions and needing to learn techniques.

Methods are summarised in figure 1. A two part approach to developing themes has been used. First, descriptive categories of barriers and facilitators have been derived from the coding of qualitative research against the training and skills described in selected intervention manuals. Second, the existing behaviour change competency frameworks and other quantitative research designs have been used to inform the development of the analytical themes. This two part approach has been applied so that the conclusions of a narrative synthesis of data from qualitative studies is relevant to the competencies professionals see as necessary for delivering effective interventions.

This is a ‘directed’ qualitative research technique that maintains the objective of this review. It contextualises the inferences made in the context of existing competency frameworks, intervention trials and systematic reviews. The aim of this directed approach is to provide evidence statements, at an appropriate level of abstraction, which synthesise a large amount of qualitative research across five behaviour change target areas for all populations and settings for which interventions are appropriate.

Behavioural change interventions are often complex. Complex interventions have been defined by the Medical Research Council as interventions with several interacting components (Craig 2008). They present a number of problems for evaluators that relate to the difficulty of standardising the design

and delivery of the interventions, their sensitivity to features of the local context, and the length and complexity of the causal chains linking intervention with outcome. For behaviour change interventions these components include:

- Intervention setting (eg. community, clinic, school)
- Intervention mode (eg. face to face to individuals/groups or remotely delivered by text messaging or telephone)
- Intervention intensity (eg. measured by frequency, duration number of sessions and often categorised as low, medium or high)
- Intervention provider (eg. GP, doctor, nurse, other health professional, non-health professional)
- Intervention complexity (eg. simple or difficult to learn)
- Intervention function (eg. education, persuasion, enablement)
- Intervention content (eg. techniques used)

3.2 Search

The evidence review for previous NICE behaviour change guidance (PH6) covered systematic reviews published up to February 2006. For the current reviews including this qualitative review, systematic searches for papers published in English from 2003 onwards were undertaken in September 2012. The following databases were searched:

- Cochrane Database of Systematic Reviews (Cochrane Library)
- Database of Abstracts of Reviews of Effects (Centre for Reviews and Dissemination)
- MEDLINE (inc. in process) (OvidSP)
- EMBASE (OvidSP)
- PsycINFO (OvidSP)
- ERIC Free (Education Resources Information Center))
- CinAHL (EBSCOhost)
- Cochrane Central Register of Controlled Trials (Cochrane Library)
- Applied Social Science Index and Abstracts (Proquest, supplied by NICE)

- HMIC (OvidSP)
- Social Policy & Practice (Ovid, supplied by NICE)

See appendix D for search strategies used.

The following grey literature sources were searched for behaviour change manuals and frameworks (UK published documents were prioritised) in September 2012:

- General internet search engines (e.g. Google, Bing)
- NHS Evidence (http://www.evidence.nhs.uk/)
- Social Care Online (http://www.scie-socialcareonline.org.uk/default.asp)
- Google Scholar (http://scholar.google.co.uk/)
- Faculty of Public Health (www.fph.org.uk/)
- British Psychological Society (www.bps.org.uk/)
- Chartered Institute of Environmental Health (www.cieh.org/)
- Nursing and Midwifery Council (www.nmc-uk.org/)

A focused search for manuals and frameworks was also conducted in Google.

Once manuals, competency frameworks and similar key documents were found, further documents were identified through “pearl searching”, that is examining reference lists, citation data, and using “related articles” and similar functionality where available. A judgement was made on when to stop grey literature searching based on 1) the lack of relevancy of new search results, and 2) how often new searches retrieve already identified documents (sometimes referred to as “Capture-mark-recapture”); i.e. when a saturation point is reached.

Search results were uploaded and managed in Reference Manager 12.

3.3 Selection of studies

Qualitative studies and intervention studies or systematic reviews describing competencies for behaviour change were sifted within Reference Manager by two information specialists against the inclusion and exclusion criteria set for

this review. Abstracts were sent to a research analyst who in discussion with the information specialists provided early feedback on the interpretation of selection criteria. Any disagreements were resolved by consensus and a final list of abstracts for full text retrieval was requested by the research analyst (who is also a registered health psychologist).

Inclusions and exclusions criteria

Qualitative studies that addressed the following were included:

- Skills and training needs as perceived by professionals delivering individual level behaviour change interventions or using behavioural change techniques.
- Data collected by structured interview, focus group, audio or video taped consultations
- Published in English after 2003

Intervention studies (randomised or non-randomised controlled trials) and systematic reviews were included if they:

- Described some aspect of training, skill or competency as a moderator of intervention effectiveness or were specifically designed to test the association of behaviour change techniques with intervention effectiveness.
- Were published in English after 2003

Studies were excluded if they:

- Were unrelated to the target behaviours (sexual health, alcohol, smoking, diet or physical activity)
- Focussed on barriers and facilitators of behaviour change interventions other than skills and training
- Described the facilitator training and skills in general terms

The search results are shown in table 1.

Table 1: Search results

Databases and sites searched	Dates searched	Number of hits
MEDLINE	2003-date	440
EMBASE	2003-date	388
CINAHL (excluding MEDLINE records)	2003-date	302
PsycINFO	2003-date	69
Cochrane CENTRAL	2003-date	360
Cochrane Database Syst Rev	2003-date	10
DARE (via Cochrane)	2003-date	4
ERIC	2003-date	Used review 2 results
HMIC	2003-date	53
Social Policy & Practice	2003-date	41
Applied Social Sciences Index and Abstracts (ASSIA)	2003-date	382
Total number after de-duplication		**1629**
Total number after inclusion of relevant review from Review 2		**1668**
Total number after first appraisal		**434**

The studies that collected data by focus group, structured interview, and reviews of qualitative studies were quality assessed using the checklists described in NICE public health guidance methods guide (appendix H). Intervention studies were also quality assessed using the quality check lists provided in the NICE public health guidance methods guide (appendix F). Included manuals were not quality assessed as these were used as frameworks and no validated quality checklist exists for them.

3.4 Descriptive categories

Descriptive categories were developed from the manuals and applied to the qualitative research in three steps.

1. The manuals identified in the search were used to produce a short list of broad skills and competencies applicable to the behavioural target areas

2. Components were developed from these lists by grouping the competencies into conceptual categories

3. Conceptual categories were applied to the qualitative research findings to derive the final descriptive categories

These descriptive categories, therefore, were proposed based on an inclusive interpretation of the list of skills from manuals and relate closely to the qualitative research findings. The overall process is summarised in figure 1.

3.5 Analytical themes

The analytical themes relate the concepts organised into descriptive categories to the three competency frameworks described in section 2.2. The analytical themes therefore take the next step in interpretation and synthesis. The process uses deductive inference moving the concepts included in the descriptive categories and accepted competency frameworks toward analytical themes. From a long list of competencies, skills and knowledge needs addressed in these frameworks, a shorter, comprehensive but mutually exclusive summary list of analytical meta-themes was developed related to the underlying categories.

A parsimonious approach to defining categories was then chosen. In this the number of categories was reduced, by combining terms into logical groups, to leave the minimum number of descriptive categories that could make sense of the thematic concepts coded. In hierarchical or tree structures, parsimony refers to the supposition that a simpler structure is preferable to the supposition of a more complicated structure or chain of events.

In the directed approach the frameworks and quantitative research designs have been used as background context to the development of the analytical themes, ensuring they are related to interventions that are both thought to be effective and also interpretable using current understanding of competence.

3.6 Extracting and presenting evidence

A health research analyst/health psychologist extracted details into evidence tables, quality appraised the relevant studies at full text, organised and coded the studies grouping them into the descriptive categories based on the interventions manuals. Data was captured until no new categories were being

identified. Provisional themes were discussed in meetings between information specialist, health psychologist, health research analyst and clinical lead for this project.

Characteristics of these studies are presented in narrative text, in summary tables and in evidence tables. A separate section includes studies grouped by analytical themes and forms the basis for the derived synthetic evidence statements.

3.7 Quality appraisal

Quality appraisal of quantitative and qualitative studies was carried out using NICE quality checklists (appendix F and H of the public health guidance methods guide). The ratings are as follows:

- [++] All or most of the NICE checklist criteria have been fulfilled, where they have not been fulfilled the conclusions are very unlikely to alter.
- [+] Some of the NICE checklist criteria have been fulfilled, where they have not been fulfilled or not adequately described, the conclusions are unlikely to alter.
- [-] Few or no NICE checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

Applicability

Characteristics of each study were recorded at data extraction so that an assessment of applicability for each evidence statement and the underlying studies could be made.

Those considered included:

- the population characteristics (eg. age, gender, ethnicity and socioeconomic status)
- the setting (in particular the country, it's healthcare delivery system and whether the intervention was delivered in a community setting)

- the provider of the intervention (eg. if the study used professionals that are not part of NHS delivery system)
- feasibility (eg. in terms of health services/costs/reach)
- acceptability (eg. number of visits/adherence required)
- accessibility (eg. transport/outreach required) and
- other characteristics specific to the topic area/review question(s).

Following this assessment each evidence statement was categorised as:

- Directly applicable
- Partially applicable
- Not applicable

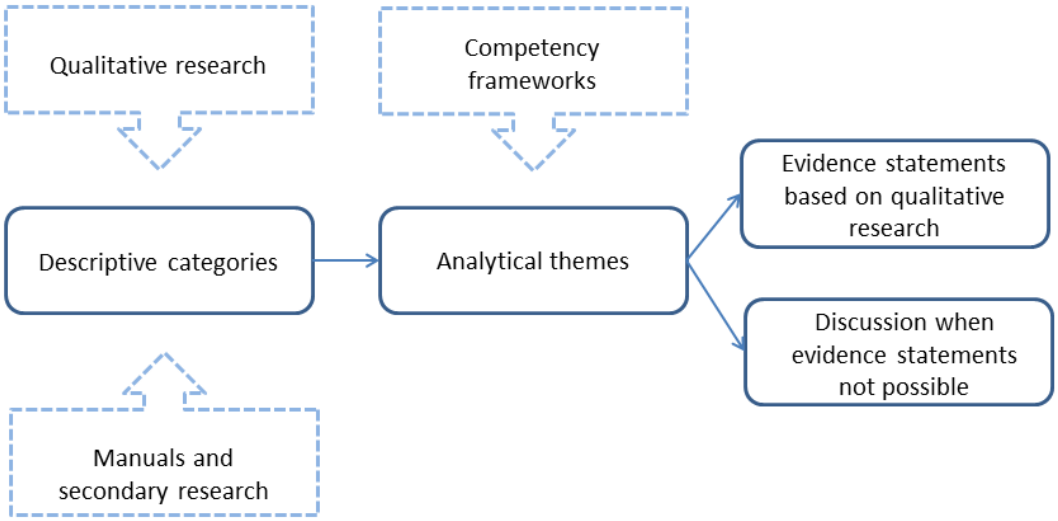
3.8 Deriving evidence statements

The evidence statements follow the principles and examples as laid out in the 'Methods for development of NICE public health guidance (third edition, 2012)'.

The qualitative evidence statements are derived from the analytical themes and present the evidence base as provisional answers offered for the questions posed in this review.

The discussion provides information on additional material that was identified in the process that is relevant but not directly related to the focused questions. For example the views of patients, the influence of settings and potential modification to interventions and technique skills or training required for specific population groups such as for people with a learning or physical disability, socioeconomic moderators, and so forth. The discussion section also describes strengths and limitations of the underlying studies.

Figure 1: Methods overview



4 Results

4.1 Overview

The following research designs and document types were included.

- 10 training manuals
- 4 frameworks
- 13 qualitative research papers (primary)
- 8 intervention studies reporting relevant perspectives on training or skills
- 14 systematic reviews or overviews
  - 4 thematic syntheses or content analyses of qualitative research
  - 8 report aspects of training or competence
  - 2 perform meta-regression of BCT (using a 26-item taxonomy, Abraham 2008) and comment on skills associated with BCT delivery

Ten training manuals and four frameworks were identified and included. The manuals describe how to deliver interventions or intervention types and include aspects of skills and knowledge alongside other process issues such as sequencing of BCTs. Most were related to alcohol screening and brief interventions, taking a general approach to teaching core skills. Some specifically aimed at teaching the principles of a model, rather than techniques themselves, such as those teaching motivational interviewing based on the trans-theoretical model. Some manuals referred to the functions or purposes of a technique or group of techniques and describe how consideration of theory and function can be used when designing interventions.

Thirty-five articles are included in this review. Of these, thirteen reported observational qualitative research looking at the knowledge and skills discussed or requested by practitioners based on data collected by interview, focus group, survey or other qualitative methodology. Eight reported qualitative results of qualitative methods used alongside intervention studies or were quantitative studies that in passing described some aspect of the

training requested to obtain the knowledge and skills necessary to deliver the specific intervention. Fourteen reviews and overviews are included; four of which are qualitative syntheses (thematic synthesis or content analysis), eight are systematic reviews reporting aspects of training and competence. Two of these perform meta-regression of BCTs (using a 26-item taxonomy, Abraham 2008) amongst pooled studies designed to investigate the effectiveness of interventions in population sub-groups or for specific behaviour targets.

4.2 Manuals and qualitative studies

4.2.1 Manuals

The manuals identified fell into two main types:

Training manuals.

- Ten manuals described in detail how an intervention should be delivered. They impart knowledge about an intervention, its theory base and in some cases the evidence supporting the components of the intervention. The knowledge is supplemented by tools and suggestions of how the competencies can be learnt.

Competency frameworks

- Three competency frameworks were identified that mapped behaviour change techniques to the NHS Knowledge and Skills Framework. The most compete of these was the Yorkshire and the Humber NHS (2010) framework.
- One framework described competencies for motivational interviewing alone, The Health Foundation (2011).

Training manuals

1. Alcohol

- Health Service Executive Ireland (2012) ‘A guiding framework for education and training in screening and brief intervention for problem alcohol use for nurses and midwives in acute, primary and community settings’

- Australian Government Department of Health and Ageing. (2008) ‘Alcohol and Other Drugs: A Handbook for Health Professionals. Part 3 Non-medical interventions’
- Department of Veterans' Affairs (2009) ‘Alcohol screening and brief intervention (AS+BI) manual: A skills based intervention and training resource for veteran service providers’
- American Public Health Association (2008) ‘Alcohol screening and brief intervention: a guide for public health practitioners’
- American College of Surgeons (2007) ‘Alcohol screening and brief intervention (SBI) for trauma patients: COT Quick Guide’
- Martino (2006) ‘Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency’
- Gual (2005) ‘Alcohol and primary health care: Training programme on identification and brief interventions’

2. Smoking

- Ghodse for International Centre for Drug Policy (2008) ‘Reduction in Tobacco Addiction Training Manual: A guide for health professionals providing smoking cessation interventions for patients in hospital and out-patient settings’

3. Diet and obesity

- Cavill for National Obesity Observatory (2011) ‘Brief interventions for weight management’

4. Lifestyle change

- Michie for DH (2008) ‘Improving health: changing behaviour NHS Health Trainer Handbook’

The category structure that was derived from these manuals is summarised in table 2.

Table 2: Behaviour Change Manuals and frameworks – Competency components

Manual	Knowledge/theory, awareness and context	Supporting the client/Adapt to client needs/ Collaboration	Screening and assessment	Offering advice and assistance	Making a referral	Feedback and follow-up	Responsibility	Menu	Empathy and reflective listening	Building self-efficacy/confidence	Goal setting	Strategies for self-management	Confidentiality	Enabler of behaviour change	Action planning	Communication/ informed choice	Problem solving	Relapse Prevention/Long term maintenance
Health Service Executive Ireland (2012) A guiding framework for education and training in screening and brief intervention for problem alcohol use for nurses and midwives in acute, primary and community settings		X	X	X	X													
Australian Government Department of Health and Ageing. (2008) Alcohol and Other Drugs: A Handbook for Health Professionals. Part 3 Non-medical interventions		X							X	X	X			X		X	X	X
Department of Veterans' Affairs (2009) Alcohol screening and brief intervention (AS+BI) manual: A skills based intervention and training resource for veteran service providers				X			X	X	X	X	X	X						
American Public Health Association (2008) Alcohol screening and brief intervention: a guide for public health practitioners		X	X	X		X			X		X		X	X	X			
American College of Surgeons (2007) Alcohol screening and brief intervention (SBI) for trauma patients: COT Quick Guide				X		X								X				
Martino (2006) 'Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency'		X	X				X		X	X				X	X			
Gual (2005) Alcohol and primary health care: Training programme on identification and brief interventions			X	X		X	X		X	X	X	X		X				X

Manual	Knowledge/theory, awareness and context	Supporting the client/Adapt to client needs/ Collaboration	Screening and assessment	Offering advice and assistance	Making a referral	Feedback and follow-up	Responsibility	Menu	Empathy and reflective listening	Building self-efficacy/confidence	Goal setting	Strategies for self-management	Confidentiality	Enabler of behaviour change	Action planning	Communication/ informed choice	Problem solving	Relapse Prevention/Long term maintenance
NHS Health Scotland (2010) Delivery of alcohol brief interventions: A competency Framework	X		X		X						X			X		X		
Ghodse for International Centre for Drug Policy (2008) Reduction in Tobacco Addiction Training Manual: A guide for health professionals providing smoking cessation interventions for patients in hospital and out-patient settings	X		X	X	X									X		X		
Cavill for National Obesity Observatory (2011) Brief interventions for weight management						X				X	X	X		X				
Michie for DH (2008) Improving health: changing behaviour *NHS Health Trainer Handbook*											X		X	X	X			
Dixon for NHS Scotland (2010) Health Behaviour Change Competency Framework: Competencies to deliver interventions to change lifestyle behaviours that affect health	X	X	X								X	X		X		X	X	X
Yorkshire and the Humber NHS (2010) Prevention and lifestyle behaviour change: A competence framework;	X	X	X	X	X		X		X	X	X	X		X	X	X	x	X
The Health Foundation (2011) Research scan: training professionals in motivational interviewing	X					X				X				X				
Total:	5	6	8	7	4	5	4	1	6	7	9	5	2	12	4	5	3	4

4.2.2 Competency frameworks

Three source documents (Dixon 2010, NHS Scotland 2010 and Yorkshire and Humber 2010) were identified in the search. These describe how competencies in a framework can be mapped to the Knowledge and Skills Framework (KSF) (DH 2004). These three competency frameworks all describe and group competencies within domains or sub-domains at several skill levels. They vary in the terms they use, in the BCT taxonomies used and how the grouping is done.

The 'Health Behaviour Change Competency Framework: Competences to deliver interventions to change lifestyle behaviours that affect health' (Dixon 2010) describes a tiered approach to interventions for health behaviour change and lists competencies required by workers delivering health behaviour change across different health behaviours and to different clients and client groups. This report is comprehensive and orders the competencies into a hierarchical framework: The Health Behaviour Change Competency Framework (HBCC) has three domains and three levels. The three domains are:

1. Foundation Competences
2. Behaviour Change Competences
3. Behaviour Change Techniques

Three levels are characterised by the intensity of the health behaviour change intervention being delivered:

1. Low intensity: Interventions delivered per protocol (i.e. following an agreed 'script') with restricted flexibility for change by the practitioner. Interventions will primarily be brief and will include opportunistic delivery. Clients may present with few or mild (but not moderate or severe) physical co-morbidities (i.e. few of those additional illnesses which often occur together).

2. Medium intensity: Interventions for which there is a manual but which offer the practitioner some flexibility in delivery. Interventions might be of longer duration, either in the form of a longer single session or multiple sessions. Interventions could be delivered opportunistically or via self-referral or referral from other services. Clients may present with mild to moderate (but not severe) physical co-morbidities.

3. High intensity: Flexible interventions delivered to match the assessed needs of the client. Typically interventions will be of longer duration and on referral from other services. Clients may present with moderate or complex physical co-morbidities and may present with moderate mental health co-morbidities.

The 'Delivery of Alcohol Brief Interventions: A Competency Framework' (NHS Scotland 2010) is specific to alcohol brief interventions (ABIs). It was developed to meet a specific need arising from the use of targets and national standards governing the delivery of these interventions in the NHS in Scotland. An expert education and training advisory group identified and agreed minimum competency standards for delivery of ABIs in order to guide training. It describes three skill levels across four domains, the levels are:

1. Awareness and referral for ABIs eg. frontline, non-specialist staff
2. Screening and referral for ABIs e.g. A&E Staff
3. Delivering ABIs e.g. health professionals in primary care, A&E and antenatal care

The four domains are:

1. Knowledge, awareness and context - a basic awareness of current policy context and the evidence base supporting the effectiveness of ABIs, and the impact of alcohol consumption on individuals and society as a whole.

2. Assessment and screening – initiating discussions about alcohol consumption using appropriate screening tools and identifying individuals who may respond to an ABI.

3. Core health behaviour change competencies – core knowledge and skills required to deliver a brief intervention effectively, including establishing rapport, adopting an empathic approach, emphasising personal responsibility and listening for readiness to change.

4. Signposting and referring appropriately - recognising and responding appropriately to individuals who show or report possible signs of alcohol dependence and judging when and where to refer those who need additional support or help.

The 'Prevention and Lifestyle Behaviour Change: A Competence Framework' (Yorkshire and Humber 2010) was developed to support NHS Yorkshire and the Humber's key public health strategy 'Making Every Contact Count'. It aims to support all staff in all organisations and to enable a common approach for use by everyone in the workforce. It has five target audiences; service or education commissioners, service or education providers and individuals. The generic competences for prevention and lifestyle behaviour change are described at three levels for most workers (level one, two and three) and at one level (level 4) for workers using specialist/advanced and behaviour specific approaches to behaviour change. Workers at this fourth level are expected to act as a resource for the support, training and education of others.

Mapping the NHS Knowledge and Skills Framework to the BCT taxonomy

Within the KSF, competencies are presented at four hierarchical skill levels across five dimensions comprising six core and 24 role specific sub-dimensions. The 3 dimensions relevant to behaviour change are described by Dixon 2010:

KSF Core Dimension is composed of 6 sub-dimensions; five are relevant to behaviour change:

- Communication
- Personal and people development
- Service improvement
- Quality
- Equality and diversity

The **KSF Health and Wellbeing Dimension** is the largest KSF dimension being composed of 10 sub-dimensions, four of which are relevant to behaviour change:

- Protection of health and wellbeing
- Enablement to address health & wellbeing needs
- Assessment and treatment planning
- Interventions and treatments

The **KSF Information and Knowledge Dimension** contains three sub-dimensions and two are relevant to behaviour change:

- Information collection and analysis
- Knowledge and information resources

The competency frameworks were compared (table 3). Behavioural change techniques and links to the KSF were provided in one competency framework (Dixon 2010). This competency framework was selected as the preferred framework as it is the most comprehensive, includes reference to BCTs and has a bibliography. The selection was made for pragmatic reasons so that the findings of this review can be structured in a way that is useful for those implementing competency based training systems or measuring performance against standards. It would be possible to structure the findings of the review against other frameworks.

Table 3: Comparison of frameworks

Title (Ref)	HBCC (Dixon 2010)	Alcohol Brief Interventions (NHS Scotland 2010)	Prevention and lifestyle behaviour change (Yorkshire and Humber 2010)
Cover	Comprehensive	Alcohol	Lifestyle behaviours
Design	Hierarchical	Matrix	Matrix
Domains	3 (foundation, behaviour change competences, behaviour change techniques)	4 domains	5 target audiences
Levels	3 (low, medium and high intensity)	3 (awareness and referral, screening and referral, delivering ABI	4 levels (three generic levels and one for workers using specialist/advanced and behaviour specific techniques)
Links to KSF	yes	no	no

4.2.3 Qualitative studies

Summary of extracted codes and the descriptive categorisation for qualitative studies are provided in table 4. Study details are provided alphabetically in appendix A and are intended to give an overview of the included studies. Appendix A also includes details of the relevant intervention studies and systematic reviews identified.

Section 4.4 provides details of how the study findings have been categorised according to 7 meta-themes relating to the characteristics and competencies of those delivering behaviour change interventions.

These meta-themes are: communication, supporting and assessing individuals, referral and signposting, motivating and enabling, competencies in standard BCTs, adapting BCTs and advanced BCTs.

Table 4: Descriptive categorisation of the qualitative research

Author year	Quality	Country	Design	Focus	n	Patient perceived Facilitators	Patient perceived Barriers	Provider perceived abilities, facilitators or barriers
Broyles 2012	**++**	US	Focus group	Alcohol	33 medical-surgical nurses			Lack of knowledge and skills, inadequate alcohol assessment protocols and poor integration with the EMR; fear of negative patient reaction Lack of time/privacy
Casey 2010	**++**	Canada	Focus group x3	Physical activity	16 participants	Motivation, flexibility, travel times Monitoring and encouragement from provider appreciated	Comorbid conditions	
Coghill 2009	**++**	UK	Semi-structured interviews with purposive sampling	Physical activity	38 men	Motivation to be healthier, intensive counselling, tailored approach, competence	Lack of time or external support	
Dillman 2010	**++**	Canada	Cross sectional survey	Lifestyle (diet, physical activity and smoking)	119 diabetes educators			Lack of time to counsel Lack of interest by patient Lack of resources Diabetes Educator lack of ability or knowledge Patient comorbidities or limitations Lack of access to facilities
Escolar-Reina 2010	**++**	Spain	Focus groups x7 focus on care provider style	Physical activity	34 patients with neck and low back pain	Feedback, motivation, reminders and monitoring of results were appreciated and improved adherence	Lack of time Lack of knowledge fear of exercise	Lack of skills in counselling and time
Jansink 2010	**++**	Netherlands	Semi-structured interviews of	Healthy lifestyle	12 nurses		Lack of patient knowledge	Lack of skills in counselling and time

Author year	Quality	Country	Design	Focus	n	Patient perceived Facilitators	Patient perceived Barriers	Provider perceived abilities, facilitators or barriers
			practice nurses				motivation	
Mahony 2012	**+**	Australia	Semi-structured interviews using grounded theory approach, purposive sampling	Diet	6 mental health occupation therapist in mental health field			Lack of confidence in counselling. Can advise in general but not give specific advice, prefer to refer to dietitian
Murphy 2011	**++**	Ireland	Qualitative interviews using grounded theory approach, purposive sampling	Diet	40 participants	Providers who provided knowledge support, motivation, relationship shift and empowerment were appreciated	Lack of confidence in patient ability	lack of confidence in counselling
O'Sullivan 2010	**+**	Canada	Interviews x3	Physical activity	15 participants	Tailored approaches and strategies to overcome barriers, encouragement and support appreciated	Longer term support needed	
Patwardhan 2009	**++**	US	Semi-structured interviews, face to face	Smoking	10 pharmacists			Fear of a negative patient reaction dominant
Robinson 2010	**++**	UK	Interview study (face to face followed by telephone interview x2)	Healthy lifestyles	20 men and 5 health professionals			Social networks, convenient locations and control valued
Thomsen 2009	**++**	Denmark	Semi-structured interview, one off	Smoking	11 women with breast cancer	Quitting helped by sense of personal achievement and endorsement from family and friends	Quitting in context of other morbidity was difficult	
Walters 2012	**++**	Australia	Semi-structured interviews	smoking, and general lifestyle	65 COPD patients provided with health mentor telephone line support	Telephone counselling acceptable and feasible		Good rapport with counsellors and motivation

4.3 Descriptive categories

4.3.1 Overview

Descriptive categories were developed from the manuals and applied to the qualitative research in three steps:

1. The manuals identified in the search were used to produce a short list of broad skills and competencies applicable to the behavioural target areas
2. 18 Components were developed from these by grouping the competencies into conceptual categories
3. 12 Conceptual categories were then applied to the qualitative research findings to derive the final descriptive categories

Skill and knowledge factors described in the qualitative research were organised into these 12 descriptive categories:

- Brief targeted assessment
- Provision of evidence-based information to guide shared decision making
- Use of a non-judgemental approach
- Collaborative priority and goal setting
- Collaborative problem solving
- Self-management support
- Self-management interventions
- Patient self-efficacy
- Active follow-up
- Guideline-based case management
- Linkages to evidence-base community programs
- Multifaceted interventions

To ensure the categories were true to the underlying research, the development of descriptive categories began with a coding of the qualitative

research against concepts derived from the review of manuals. See table 4 for a summary and full evidence tables in appendix E.

4.3.2 Descriptive categories

Components: The eighteen components of behaviour change interventions common to the manuals are listed below. The review and coding of qualitative research identified provider perceived abilities, facilitators and barriers. Components of behaviour change interventions mentioned in manuals:

- Knowledge/theory, awareness and context
- Supporting the client/adapt to client needs/collaboration
- Screening and assessment
- Offering advice and assistance
- Making a referral
- Feedback and follow-up
- Responsibility
- Menu
- Empathy and reflective listening
- Building self-efficacy/confidence
- Goal setting
- Strategies for self-management
- Confidentiality
- Enabler of behaviour change
- Action planning
- Communication/informed choice
- Problem solving
- Relapse Prevention/long term maintenance

Descriptive Categories: The analysis of the full papers identified several key concepts which could be used to group the components further. Data saturation, the point at which reviewing further papers was not identifying further concepts was reached with the qualitative studies identified. The relationship between components and categories is seen in table 5.

Table 5: Relationship between 18 components from manuals and the descriptive barriers and facilitator categories derived from primary research

Descriptive categories (barriers)	**Descriptive categories (facilitators)**	**The 18 Components and concepts described in manuals**
Lack of knowledge	Knowledgeable providers appreciated (patient factor)	Professional knowledge, awareness, familiarity with theory, and context
Lack of external support, access (patient factor)	Flexibility in timing and location appreciated (patient factor)	Supporting the client/adapting to client needs/collaboration
Lack of time		Screening and assessment
Fear of negative reaction, lack of time		Offering advice and assistance
Lack of access to facilities or referral routes		Making a referral
Lack of BCT skills	Feedback and monitoring valued (patient factor)	Feedback and follow up
	Ability to empower (patient factor)	Responsibility
Lack of BCT skills		Menu
Fear of negative reaction Lack of core skill	Good rapport appreciated (patient factor)	Empathy and reflective listening
Lack of core skill	Encouragement appreciated by patients	Building self-efficacy/confidence
Lack of core skill	Monitoring appreciated by patients	Goal setting
Lack of BCT skill		Strategies for self-management
Lack of core skill		Confidentiality
Lack of BCT skill	Ability to develop motivation	Enabler of behaviour change
Lack of BCT skill		Action planning
Lack of core skill		Communication of informed choice
Lack of BCT skill		Problem solving
Lack of followup		Relapse prevention/long term maintenance

Following the coding of primary research the following list of descriptive categories were developed:

- Lack of provider knowledge
- Lack of patient knowledge
- Lack of external support
- Lack of time for intervening
- Fear of negative reaction
- Lack of access to facilities or referral routes
- Lack of a core skill
- Lack of a BCT skill
- Lack of an advanced BCT skill
- Lack of follow-up

These provisional descriptive categories were taken forward to the development of analytical themes.

4.3.3 Developing analytical themes from descriptive categories

The analytical themes were developed using synthesis of descriptive categories and applying the contextual knowledge of the competency frameworks and findings from systematic reviews.

The skill and training factors (behaviour competencies) and themes were matched and then grouped into seven analytical meta-themes based on the context set by reviews and the selected behaviour change competency framework.

Twelve behaviour change competencies (BC) are described in the HBCC framework (Dixon 2010) see table 6.

Table 6: Behaviour change competencies

Behaviour competency code	**Description of competency**
BC1	Knowledge of health behaviour and health behaviour problems
BC2	Ability to undertake a generic assessment
BC3	Knowledge of a model of behaviour change and the ability to understand and employ the model in practice
BC4	Ability to agree goals for the intervention
BC5	Capacity to implement behaviour change models in a flexible but coherent manner
BC6	Capacity to select and skilfully apply the most appropriate behaviour change intervention method
BC7	Capacity to implement behaviour change in a manner consonant with its underlying philosophy
BC8	Ability to structure consultations
BC9	Ability to use measures and self-monitoring to guide behaviour change interventions and to monitor outcome
BC10	Ability to carry out health behaviour problem solving
BC11	Capacity to manage obstacles to carrying out behaviour change
BC12	Ability to end the intervention in a planned manner and to plan for long-term maintenance of gains after intervention ends

This process and the mapping of meta-themes, themes, competencies, categories and manual components is summarised in table 7.

Table 7: Analytical themes, Behaviour competency codes, descriptive categories and manual components

Meta-themes	Analytical themes	Behaviour Competencies, from HBCC framework (Dixon 2010).	Descriptive categories	Manual components
1. Communication	Themes of professional knowledge and awareness, familiarity with theory, communication of health information or patient knowledge	**BC1** Knowledge of health behaviour and health behaviour problems **BC3** Knowledge of a model of behaviour change and the ability to understand and employ the model in practice	• Lack of provider knowledge • Lack of patient knowledge	Professional knowledge, awareness, familiarity with theory, communication of health information, and patient knowledge
2. Supporting and assessing individuals	Themes of support, screening, assessment, advice, assistance, engagement, responsibility and confidentiality	**BC2** Ability to undertake a generic assessment **BC7** Capacity to implement behaviour change in a manner consonant with its underlying philosophy **BC8** Ability to structure consultations	• Fear of negative reaction • Lack of core skill	Support, screening, assessment, advice, assistance, engagement, responsibility and confidentiality
3. Referral and signposting	Themes of referral, follow up, maintaining change and exit from programmes	**BC4** Ability to agree goals for the intervention **BC10** Ability to carry out health behaviour problem solving **BC12** Ability to end the intervention in a planned manner and to plan for long-term maintenance of gains after intervention ends	• Lack of external support • Lack of time for intervening • Lack of access to facilities or referral routes	Referral, follow up, maintaining change and exit from programmes
4. Motivating and enabling	Themes of reflective listening, empathy, building self-efficacy and providing feedback	**BC7** Capacity to implement behaviour change in a manner consonant with its underlying philosophy **BC8** Ability to structure consultations	• Lack of core skill	Reflective listening, empathy, building self-efficacy and providing feedback

5. Standard behaviour change techniques	Themes of action planning, goal setting, strategies for self-management, problem solving, relapse prevention, maintaining change	**BC4** Ability to agree goals for the intervention **BC9** Ability to use measures and self-monitoring to guide behaviour change interventions and to monitor outcome **BC10** Ability to carry out health behaviour problem solving **BC11** Capacity to manage obstacles to carrying out behaviour change **BC12** Ability to end the intervention in a planned manner and to plan for long-term maintenance of gains after intervention ends	• Lack of BCT skill	Action planning, goal setting, strategies for self-management, problem solving, relapse prevention, maintaining change
6. Adapting behaviour change techniques	Themes of tailoring techniques to personal and behaviour specific goals, choice and providing menus	**BC5** Capacity to implement behaviour change models in a flexible but coherent manner **BC6** Capacity to select and skilfully apply the most appropriate behaviour change intervention method **BC7** Capacity to implement behaviour change in a manner consonant with its underlying philosophy	• Lack of BCT skill	Tailoring techniques to personal and behaviour specific goals, choice and providing menus
7. Advanced behaviour change techniques	Themes of group counselling skills, making use of prompts, cues and incentives, training	**BC3** Knowledge of a model of behaviour change and the ability to understand and employ the model in practice **BC11** Capacity to manage obstacles to carrying out behaviour change Ability to act as a resource for the support, training and education of others*	• Lack of advanced BCT skill	Including group counselling skills and making use of prompts, cues and incentives Training and educating others

* Note this competency was not considered in scope for the HBCC framework and so has not been allocated a unique BC number.

4.4 Analytical themes

4.4.1 Communication

Lack of professional knowledge, awareness and familiarity with theory

In a cross-sectional survey of 119 diabetes educators recruited from three provinces in Canada, Dillman et al. (2010) found educators said their own lack of knowledge was a barrier to personal efficacy in counselling.

A Dutch review of 23 systematic reviews (Van Achterberg 2010) including 210 studies for improving healthy lifestyle (physical activity, healthy eating and smoking cessation). Professional knowledge and familiarity with theory was needed for risk communication and this was found in 52% of effective interventions.

Professionalism (e.g. knowledge of health and well-being and its different aspects) is listed as a classification of competencies in a review and thematic synthesis of the competences needed to deliver behavioural support for smoking cessation by Michie et al. (2011).

For interventions targeting alcohol, a domain specific competency framework (NHS Health Scotland 2010) says that a familiarity with local and national policy context relevant to alcohol and brief interventions along with specific knowledge of effects of alcohol consumption and of drinking guidelines and how to calculate units of alcohol is needed by those offering brief interventions.

Knowledge of the relationship between behaviour and health status is a behaviour change competency in two generic competency frameworks (Dixon 2010, Yorkshire and the Humber NHS 2010).

Lack of patient knowledge and provider need to communicate

In interviews with Dutch practice nurses conducted by Jansink et al. (2010) it was revealed that nurses felt patients had limited knowledge of a healthy lifestyle and limited insight into their own behaviour.

In interviews with patients with type 1 diabetes (Murphy 2011) gaining knowledge was found to be an important influence on the ability to self-manage and the patient's sense of being in control of their disease.

Participants in community nurse COPD health-mentors study (Walters 2012) found telephone delivery acceptable and that it increased their awareness of the effects of chronic obstructive pulmonary disease.

The heightened personal awareness of health issues and the harms from smoking in patients newly diagnosed with breast cancer being offered preoperative smoking cessation was perceived as a 'teachable' moment (Thomsen 2009). Imparting knowledge at these encounters (timing of communication) and taking the opportunities such encounters present were suggested as future targets for intervention design.

A Dutch review of 23 systematic reviews (Van Achterberg 2010) supports the effectiveness of the techniques targeting patient knowledge (from 210 studies) for improving healthy lifestyle (physical activity, healthy eating and smoking cessation). Risk communication particularly was found in 52% of effective interventions.

In contrast a systematic review that included the fidelity of interventions delivered by lifestyle advisors (Carr 2011) found that the evidence only gave limited support to lifestyle advisors having a positive impact on patient's health knowledge, behaviours and outcomes despite high levels of acceptability. The lack of impact of these interventions may be a function of the type or length of training received by lifestyle advisors and so it may not be generalisable to the interventions provided by other health professionals with other training.

In a study that aimed to identifying the competences for behavioural support in smoking cessation in a consensus process led by an expert panel, Michie et al. (2011) list general communication (e.g. the ability to elicit and answer questions) as an important general aspect of an intervention.

4.4.2 Supporting and assessing individuals

Lack of support for individuals

The detail of what is defined as support is often missing from studies. Where it is more fully described two main types of support are described as facilitators in the qualitative research. First, the ability to provide general support by a therapist (eg. a supportive attitude and offering advice and assistance) this is seen as a core characteristic of an effective interaction. Second, external support such as the practical support provided by family and friends (providing social support practical, emotional or unspecified). As providing these types of practical assistance are specified as behaviour change techniques, the offer of support and a supportive attitude are discussed here and the BCT defined support is discussed as a core competence (section 4.4.6).

In a study by Coghill (2009), semi-structured interviews were used to explore perceptions of men at risk of CVD with high cholesterol levels, of a home-based walking intervention. Support for autonomy, which enhanced motivation, was mentioned as an important contribution to feelings of confidence. Longer-term support was also appreciated by participants for maintenance of benefit, but it was said that this may reflect a desire by participants for a longer programme or improved transition from the programme to self-directed activities.

This request for better transition or exit from a programme with support and supervision to self-directed activities was also a theme in focus groups run by Casey et al. (2009).

A qualitative component of a DAFNE (dose adjustment for normal eating) diabetes study (Murphy et al 2011) reported five factors influenced participants' self-management of their diabetes helping them 'be in control'. Support is one of these but is not specified further.

In an analysis of non-significant counselling effects in an RCT of smoking cessation, McCarthy (2010) assessed the bolstering effect of social support amongst other motivation, problem-solving and coping skills. Receiving social

support, was a predictor of abstinence but importantly counselling itself did not significantly boost perceived social support.

Systematic reviews have explored whether support provided by telephone from professionals induces or maintains behaviour change. For example, in a Cochrane review of nursing interventions for smoking cessation, Rice (2008) identified forty-two studies that met the inclusion criteria. Thirty-one studies compared a nursing intervention to a control or to usual care and found the intervention to significantly increase the likelihood of quitting (RR 1.28, 95% CI 1.18 to 1.38). Results showed evidence that higher intensity interventions did not have a larger treatment effect although there was weak evidence that additional telephone support increased smoking cessation.

Training manuals and two competency frameworks mention providing social support as a skill. Cavill (2011), describing brief interventions for lifestyle change in reducing obesity, concludes that access to good social support (information support, emotional support and encouragement), or practical support (such as advice about accessible walking routes) improves an individual's confidence (citing Michie 2009). In Dixon (2010) social support (emotional) as a BCT is defined as 'to provide or identify potential sources of empathy and give generalised positive feedback' is listed as a motivational skill for delivering low intensity interventions.

There is a lack of consistent and clear use of the term "social support" in research reports and a lack of congruence with the definition of BCTs that are included in the cluster "social support".

Assessing individuals and use of screening tools

In a focus-group study of the anticipated barriers and facilitators to implementing nurse-delivered alcohol screening, brief intervention (BI) and referral to treatment (RT) from the US, Broyles at al. (2012) described 6 barriers and 3 facilitators reported by 33 medical-surgical nurses (97% female). Inadequate alcohol assessment protocols and poor integration with the electronic medical record and questions about the compatibility of

screening, BI and RT with the acute care paradigm and nursing role were raised along with other barriers already described. The enhanced electronic medical record was seen as a facilitator to improve the uptake of assessment and screening for alcohol disorders.

Manuals also include descriptions of how assessments should be done. Manuals for alcohol screening and brief interventions describe the use of screening tools to assess problem drinkers' prior to the alcohol brief interventions.

Two manuals were included on alcohol brief interventions that describe screening tools for alcohol intake: Martino (2006) 'Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency' and Gual (2005) 'Alcohol and primary health care: Training programme on identification and brief interventions'.

For non-alcohol interventions, Cavill (2011) says health professionals can use the General Practice Physical Activity Questionnaire (GPPAQ) to assess an individual's level of activity.

For smoking interventions, Ghodse (2008) in a Tobacco Addiction Training Manual suggests that assessment should include; smoking status, motivation to quit, readiness to change and nicotine dependence. All three competency frameworks include features of assessment (including screening tools for risk of alcohol harm, for example).

4.4.3 Referral and signposting

Lack of skills in referral

Dillman et al. (2010) in a cross-sectional survey of 119 diabetes educators in Canada, who mostly saw fewer than 10 patients per day, included questions about referral amongst other competencies. Skills in making appropriate exercise related referrals were listed and requested in any future training programmes by these diabetes educators.

4.4.4 Motivating and enabling

Ability to develop motivation or motivating style

The ability to develop motivation in people was specified as a facilitator in some qualitative studies. But the word motivation is used in a different sense in some of this qualitative research. For example Coghill et al. (2009) say that health or fitness were the main motivational themes for adherence to a walking intervention promoting regular physical activity, without specifying a competence or skill in motivating people. The ability to develop motivation in this review is treated as a separate skill that leads to a client/patient state 'motivation to change behaviour'. Motivating in this sense is seen as a pre-requisite for positive change, but a motivational style is a characteristic of the provider and the interaction. Where motivating is mentioned in interviews and focus groups it is described here. Where 'motivating" is a specific technique or set of techniques thought necessary for the development of motivation it is discussed as a BCT competency.

Casey et al. (2009) ran three focus group discussions in Canada aiming to assess the barriers and facilitators to participation in a supervised exercise programme. The study found that participants appreciated the monitoring, encouragement and accountability provided by programme staff. This, they said, provided motivation.

Jansink et al. (2010) conducted 12 in-depth interviews with practice nurses in a Dutch general practice and asked about the specific barriers they experienced in counselling patients with type 2 diabetes. Training in motivational interviewing was proposed by the researchers to help overcome the tendency of these nurses to 'jump ahead of the patient' and to overcome a perceived lack of motivation in their patients.

Self-efficacy

Development of motivation and enablement to act were strong themes identified by patients with type 1 diabetes for imparting a sense of being in control. The study by Murphy et al. (2011) used grounded theory methods to

interview 40 patients with type 1 diabetes in Ireland. Their perspectives on self-management and the determinants of the capacity to successfully self-manage their disease were collected by interview and development of motivation and empowerment to act, alongside gaining knowledge, a relationship shift towards collaboration and support were identified as important determinants of self-management (self-efficacy).

Empathy

Empathy, defined as the extent to which the therapist conveyed an understanding of the client's perspective, was one focus of a study to assess motivational skills for substance misuse. Therapist sessions were recorded after a 2 day training workshop (Moyers 2005). The US health professionals licensed in counselling, psychology, medicine, nursing or social work were already treating 5 or more clients per week with substance abuse disorders (including alcohol) in individual counselling sessions. Four, 8 and 12 months after their training, the first 20 minutes of tape recorded therapy sessions were coded (using a validated score the Motivational Interviewing Skills Code). Six global clinical skills: empathy, acceptance, egalitarianism, warmth, genuineness and overall motivational interviewing 'spirit'. Analysis of the correlations showed that empathy, as part of these interpersonal skills, was positively associated with client involvement and that it directly facilitates the collaboration between therapist and client during motivational interviewing sessions.

Providing feedback

The conclusions in one systematic review (Michie 2009) support the notion that providing feedback on performance and prompting review of behavioural goals in healthy eating and physical activity interventions, techniques derived from Control Theory, were significantly more effective at inducing behaviour change than those not derived from this theory.

Four manuals describing provision of brief interventions all include specific advice on feedback and follow up. Three for reducing alcohol intake; the

American Public Health Association (2008) write for a public health practitioner audience, the American College of Surgeons (2007) produced a quick guide to alcohol screening and brief intervention (SBI) for trauma patients and Gual (2005) describes a training programme for primary health care. All suggest that a brief intervention should give feedback on screening results, blood alcohol levels and make suggestions respectfully in the form of information, without judgment or accusations.

A briefing paper (Cavill 2011) aims to provide a guide to brief interventions for weight management in adults. It recognises the importance of self-regulation saying that brief interventions should include self-monitoring to enable patients to recognise progress towards a goal and that these should be combined with other strategies such as providing feedback on progress towards goals.

4.4.5 Core competencies in delivering standard behaviour change techniques

Providing Social Support (delivered by others)

In a study by Coghill (2009), semi-structured interviews were used to explore perceptions of men at risk of CVD with high cholesterol levels of a home-based walking intervention. External support was identified as a motivator for increased activity. Support for autonomy, which enhanced motivation, was mentioned as important contribution to feelings of competence. Longer-term support was also appreciated by participants for maintenance of benefit, but may reflect a desire by participants for a longer programme or improved transition from the programme to self-directed activities.

This request for better transition or exit from a programme with support and supervision to self-directed activities was also a theme in focus groups run by Casey et al. (2009).

A qualitative component of a DAFNE (dose adjustment for normal eating) diabetes study (Murphy et al 2011) reported five factors influenced participants' self-management of their diabetes helping them 'be in control'.

Support is one of these but is not specified further. In a content synthesis of the qualitative literature, Murray (2012) specified support from friends and family as one of five key themes in the literature on facilitators to lifestyle behaviour change in individuals at high risk of cardiovascular events.

In an analysis of non-significant counselling effects in an RCT of smoking cessation, McCarthy (2010) assessed the bolstering effect of social support amongst other motivation, problem-solving and coping skills. Receiving social support was a predictor of abstinence but importantly counselling itself did not significantly boost perceived social support.

Robinson (2010) identified settings and social networks as key influencers on participation in a healthy lifestyle programme.

Systematic reviews have explored whether support (and telephone support) from professionals induces or maintains behaviour change. For example, in a Cochrane review of nursing interventions for smoking cessation, Rice (2008) identified forty-two studies that met the inclusion criteria. Thirty-one studies compared a nursing intervention to a control or to usual care and found the intervention to significantly increase the likelihood of quitting (RR 1.28, 95% CI 1.18 to 1.38). Results showed evidence that higher intensity interventions did not have a larger treatment effect although there was weak evidence that additional telephone support increased smoking cessation.

Williams (2011) identified six behaviour change techniques that were successful for physical activity interventions. One of these was facilitation of social comparison and time management, but ‘plan social support/social change’ was a technique associated with lower self-efficacy and lower physical activity effect and reinforces the notion that the precise nature of the support offered is important. Based on causal analyses, another systematic review of physical activity and dietary interventions in people at risk of diabetes, Greaves (2011), found intervention effectiveness was increased by engaging social support.

Two other systematic reviews report almost identical conclusions regarding social support. Van Achterberg (2010) reported that the content of interventions for the promotion of healthy behaviours is often insufficiently reported, however self-monitoring, risk communication and use of social support is most often identified as effective. Battersby (2010), in Australia, provides a set of principles underpinned by evidence from randomised controlled trials to inform implementation of self-management support in primary care. The authors report that none of the twelve behaviour change techniques identified demonstrated clear effects in convincing majorities of the studies in which they were evaluated. Use of social support (alongside self-monitoring of behaviour and risk communication) was often identified as effective.

Training manuals and two competency frameworks mention providing social support as a skill. Cavill (2011), describing brief interventions for lifestyle change in reducing obesity, concludes that access to good social support (information support, emotional support and encouragement), or practical support (such as advice about accessible walking routes) improves an individual's confidence. In Dixon (2010) social support (emotional) as a BCT defined as 'to provide or identify potential sources of empathy and give generalised positive feedback' is listed as a motivational skill for delivering low intensity interventions.

Provider and patient views of what skills provide motivation (and motivational interviewing)

In a Canadian study by O'Sullivan et al. (2010) three semi-structured interviews were undertaken as a qualitative component of a successful physical activity counselling trial based on self-determination theory. Support for autonomy enhanced the motivation of participants and encouragement (verbal persuasion) offered by the counsellor to increase activity levels was universally valued by all 15 patients.

Motivational interviewing skills were coded using a validated score in two studies. The first study conducted by Gaume et al. (2008). In a sample of 166

consecutive alcohol brief interventions (15 minute session) in an emergency department in the US counsellors demonstrating better motivational interviewing skills achieved better outcomes overall across all levels of patient 'ability to change', whereas counsellors with poorer motivational interviewing skills were effective mostly only at high levels of 'ability to change'.

In the second study Moyers et al. (2005) that coded these skills, contradictory findings were reported as techniques inconsistent with motivational interviewing such as confronting, directing, offering advice without permission and warning patients were associated with improved client involvement. The authors concluded that clinician adherence to the spirit of the motivational interviewing method, rather than the specific techniques for implementing it, is an important competency to emphasise in training.

Lai et al. (2010) explored pharmacological and behaviour interventions based primarily upon motivational interviewing (MI) for smoking cessation in a systematic review. Critical details in how motivational interviewing was modified for study populations, training of therapists and content of counselling were lacking from trial reports however.

Empathy and reflective listening

Moyers et al. (2005) assessed the skills of 103 therapists in motivational interviewing after a 2 day training workshop, with the aim of understanding better how motivational interviewing works. The first 20 minutes of the tape recordings were coded (using a validated score the Motivational Interviewing Skills Code). Empathy was one of 6 global clinical characteristics of the therapist coded along with acceptance, egalitarianism, warmth, genuineness and overall motivational interviewing 'spirit'. The authors suggest that clinician adherence to the spirit of the motivational interviewing method, empathy and reflective listening enhanced the impact of therapist interpersonal skills upon client involvement rather than the specific techniques for implementing motivational interviewing.

Structuring the consultation

Lack of time for consultations or counselling was reported as a barrier by professionals in two studies.

Dilman et al. (2010) from Canada in a cross-sectional survey of 119 diabetes educators found that incorporating in-depth physical activity and exercise counselling in their practice was perceived as “somewhat difficult” from a lack of time for counselling. Lack of interest by the patient, a lack of resources, educator lack of ability/knowledge, patient co-morbidities or limitations and a lack of access to facilities were all cited as barriers. Skills and training requested by educators were in promoting self-confidence in patients ability to succeed, in time management and in making appropriate exercise related referrals.

Escolar-Reina et al (2010) in Spain investigated problems encountered complying with exercise programmes and included lack of clinical knowledge about the disease or goals of exercise. Effects of prescribed exercises were both positive and negative with ‘proper’ supervision suggested as a potential method to reduce patients’ insecurity and fear of exercising at home. Participants described their positive and negative experiences regarding time taken to exercise, the complexity and effects of prescribed exercises during exercise instruction, and specified being given reminders to exercise or monitoring of results and adherence as facilitators.

Action planning, goal setting and problem solving

Walters et al. (2012) conducted semi-structured interviews in Australia alongside a trial of telephone health-mentoring for 44 participants with moderate or severe COPD. A two-day training programme included: motivational interviewing skills; goal setting; action planning and problem solving; self-management support theory and practice. The intervention helped participants “develop and personalise behaviour change strategies” however it is not clear which training component was appreciated most.

This issue of which component is responsible for an effect (and in which order) was addressed in a randomised trial of a physical activity intervention

in the UK. French et al. (2012) assessed the impact of the intervention (steps measured by pedometer) when motivational components and volitional components were delivered either on a single occasion or on separate occasions in a three arm trial. This was an attempt to see if motivational and volitional components (such as goal setting, action planning and coping planning) were better delivered together of one before the other. The study showed a larger effect size when motivational and volitional components were delivered together and suggest the competency to deliver these techniques needs to be widely available.

In a further systematic review and moderator analysis of randomised and non-randomised studies, Williams et al. (2011) found that action planning amongst other techniques (reinforcement of effort or progress and provision of instructions) significantly enhanced self-efficacy scores and physical activity behaviour effect sizes.

Goal setting and prompting review of behavioural goals, but not action planning itself was an effective technique in a systematic review including meta-regression by Michie et al. (2009) described previously.

Battersby et al. (2010) in a qualitative review of reviews and meta-analyses. Lists the following principles derived from a thematic content analysis:

1. Collaborative priority and goal setting
2. Collaborative problem solving
3. Self-management support by diverse providers
4. Self-management interventions delivered by diverse formats

Problem solving was also listed in the consensus building study by Michie et al. (2011) that identified the competences needed to deliver behavioural support for smoking cessation '*S: Maximising self-regulatory capacity and skills (e.g. ability to facilitate barrier identification and problem solving*)'.

Ability to promote self-management

Perspectives on self-management were explored in a study by Murphy et al. (2011) of 40 patients with type 1 diabetes in Ireland. Their capacity to successfully self-manage their disease was assessed by interview. Motivation and empowerment, alongside gaining knowledge, a relationship shift towards collaboration and support were identified as important determinants of self-management.

Walters et al. (2012), described above, also taught self-management support theory and practice in a telephone health-mentoring intervention to nurses.

4.4.6 Specific competencies for adapting behaviour change techniques

No qualitative research was identified that made comment on the experience of patients or practitioners in providing menus, delivering flexible models or tailoring interventions to patient choice or need in terms of behaviour target.

'Providing menus' could be coded for in the Department of Veterans' Affairs (2009) Alcohol screening and brief intervention (AS+BI) manual. 'Providing informed choice' related to flexibility is a competence in two frameworks. Dixon (2010) in the 'Health Behaviour Change Competency Framework' and Yorkshire and the Humber NHS (2010) in 'Prevention and lifestyle behaviour change: A competence framework'.

4.4.7 Advanced competencies for delivering behaviour change techniques as part of programmes

Lack of Skills for group counselling

Michie et al. (2011) undertook a study to identifying the competences needed to deliver behavioural support for smoking cessation. An expert panel generated a list of competencies for individual behaviour support from ten documents and used a further three documents (The English Health Development Agency Training Standard for Smoking Cessation, the Northern Ireland Training Standard and a published manual of smoking cessation) for generating the competencies for group behavioural support. Six competences

for group-based behavioural support were identified from the intervention descriptions in the eight RCTs showing clear evidence of efficacy, of which five were mentioned in at least two. Three competences were cited in two or more source documents and at least two RCTs.

These were:

- Encourage group discussions
- Encourage group tasks that promote interaction and/or bonding and
- Encourage mutual support.

The experience of patients or providers in providing prompts and cues was not commonly described in the qualitative research identified and what there is provides weak evidence. Michie et al. (2009) conducted a systematic review and meta-regression of effective behaviour change techniques in healthy eating and physical activity interventions. Amongst the behavioural techniques assessed were some more complex BCTs that were associated with lower physical activity, implying that the way in which they were delivered was ineffective. These were setting graded tasks, use of follow-up prompts and relapse prevention.

Making use of prompts

Dombrowski et al. (2010) in a systematic review of randomised controlled trials of complex behaviour interventions for obese adults with obesity related co-morbidities or risk factors for co-morbidities used a 26-item taxonomy (Abraham 2008) to code programme components. The meta-regression of 44 studies suggested that increasing numbers of identified BCTs are not necessarily associated with better outcomes. But the provision of instructions ($\beta -2.69$, $p=0.02$), self-monitoring ($\beta -3.37$, $p<0.001$), relapse prevention ($\beta -2.63$, $p=0.02$) and prompting practice ($\beta -3.63$, $p<0.001$) could be linked to more successful interventions. This suggests that the competence to use prompts and to focus on relapse prevention, perhaps by managing obstacles,

could be important to this behaviour change target, which requires a prolonged change in habits.

5 Evidence statements

What are the characteristics and competencies required to deliver behaviour change interventions in those delivering behaviour change interventions?

These evidence statements are organised in a way that answers the three aspects to this question: characteristics, knowledge and skills. Provider characteristics are phrased as personal traits of those delivering behaviour change interventions, for example, “being supportive”. The knowledge and skills required to develop these traits are competencies and the qualitative evidence mainly reports providers’ perspectives on these, such as providing ‘practical support’. Competencies differ from characteristics in that they are teachable relating to ‘how’ the skills or knowledge are transferred.

5.1 Provider characteristics

5.1.1 Being supportive

Defined as the supportive interaction of a professional with a patient. For example, in assessment, providing advice or assistance for behaviour change.

Evidence from three qualitative studies (Coghill 2009 [++], Casey 2009 [++], McCarthy 2010 [++]) and one systematic review (Rice 2008 [++]) suggests that ‘being supportive’ is a characteristic required in delivering behaviour change interventions. The following attributes are commonly mentioned positively:

- Support for autonomy, by enhancing motivation, was mentioned as an important contributor to feelings of competence (Coghill 2009)
- Longer term support after the end of the programme was appreciated by participants. This may reflect a misunderstanding of the need to promote a transition to self-directed activities (Casey 2009)

- Support and supervision to self-directed activities was a theme in focus groups running alongside a trial of dietary and physical activity counselling (Casey 2009)
- Smoking cessation counselling itself did not significantly boost perceived social support (McCarthy 2010)
- Weak evidence that additional telephone support increased smoking cessation in a Cochrane review of 31 nursing interventions for smoking cessation (Rice 2008)

The lack of consistent effect in a systematic review may reflect the lack of consistent definition or coding of the BCTs that include social support. However, most interventions promote a supportive approach and this provider characteristic is appreciated by patients and recognised as important by providers.

Applicability

This research is directly applicable to the UK.

5.1.2 Being motivating

Evidence from two qualitative studies (O'Sullivan 2010 [+] and Moyers 2005 [++]) support the concept of being motivating as a provider characteristic.

- Support for autonomy enhanced the motivation in a physical activity intervention and encouragement (verbal persuasion) offered by the counsellor was universally valued (O'Sullivan 2010)
- Clinician adherence to a motivating spirit rather than the specific techniques of motivational interviewing was felt to be an important competency to emphasise in training (Moyers 2005)

Applicability

This research is directly applicable to the UK.

5.1.3 Being empathetic

Evidence from one qualitative study (Moyers 2005 [++]) supports the concept of being empathetic as a provider characteristic.

- Empathy was one of 6 global clinical characteristics of the therapist coded along with acceptance, egalitarianism, warmth, genuineness and overall motivational interviewing 'spirit' (Moyers 2005)

Applicability

This research is directly applicable to the UK.

5.2 Competencies (Knowledge and communication)

5.2.1 Professional knowledge

Professional knowledge defined as knowledge and awareness of risks and outcomes of conditions, behaviour change interventions, or familiarity with theory and local policy and context.

Evidence from one qualitative study (Dillman 2010 [++]), one systematic review (Van Achterberg 2010 [+]) and one review (Michie 2011 [+]) suggest that professional knowledge is a competence recognised as a facilitator of behaviour change.

The following were reported in different settings:

- Diabetes educators in Canada said their own lack of knowledge was a barrier to personal efficacy in counselling (Dillman 2010)
- Professional knowledge and familiarity with theory in an overview of systematic reviews for improving healthy lifestyle (physical activity, healthy eating and smoking cessation) in Holland was associated with effectiveness (Van Achterberg 2010)
- Professionalism (e.g. knowledge of health and well-being and its different aspects) is listed as a competence needed to deliver behavioural support for smoking cessation (Michie 2011)

Applicability

This research is directly applicable to the UK. It comes from developed countries with similar health systems to the UK. However, minor differences in the professional roles and training offered across countries exist.

5.2.2 Ability to communicate health information

Evidence from four qualitative studies (Jansink 2010 [++], Murphy 2011 [++], Thomsen 2009 [++] and Walters 2012 [++]), one review (Michie 2011 [+]) and two systematic reviews (Carr 2011[++] and Van Achterberg 2010 [+]) suggests that the ability to communicate information is a skill recognised as a facilitator for effective behaviour change interventions. Several aspects of communication are considered important in the qualitative literature:

- Communicating information about a healthy lifestyle and providing insight into behaviours (Jansink 2010)
- Personal knowledge was found to influence the ability of patients with type 1 diabetes to self-manage, and brought a sense of being in control of their disease (Murphy 2011)
- The ability of community nurses and COPD health-mentors to deliver information by telephone was considered acceptable by patients, was teachable and led to increased knowledge about the effects of chronic obstructive pulmonary disease (Walters 2012)
- Imparting knowledge at encounters referred to as teachable moments, when reception to information is heightened by disease or other health intervention, may provide a target for intervention design (Thomsen 2009)
- Communication of risk in a Dutch overview of systematic reviews for improving healthy lifestyle was found in 52% of effective interventions (Van Achterberg 2010)
- The ability to elicit and answer questions was considered an important general aspect of an intervention by a consensus group but is not listed as a specific technique (Michie 2011)

There are some cautions in the qualitative literature:

- Information provided by lifestyle advisors had little impact on health knowledge, behaviours and outcomes despite high levels of acceptability. Though this may be specific to the length or type of training received by lifestyle advisors and may not apply to the training received by other health professionals (Carr 2011)

Applicability

This research from Dutch general practice, Ireland and the UK is directly applicable to this scope. It comes from developed countries with similar health systems to the UK. However, minor differences in the roles and training of some professionals involved in behaviour change across countries exist. The role of lifestyle advisors or diabetes nurse educators, and the time available for consultations in the UK, for example, may vary between countries.

5.3 Competencies (Skills)

5.3.1 Skills in assessing individuals

Defined as use of screening tools and one to one assessment.

Evidence from one qualitative study (Broyles 2012 [++]) suggests that the assessment of individuals and use of screening tools is a competence recognised as a facilitator of behaviour change. The following barrier to a nurse-delivered alcohol screening, brief intervention and referral to treatment programme was identified:

- Inadequate alcohol assessment protocols and poor integration with the electronic medical record (Broyles 2012)

The facilitators identified to improve the uptake of assessment and screening for alcohol disorders included:

- The enhanced electronic medical record (Broyles 2012)

Applicability

The primary research here was conducted in the US and is moderately applicable to this scope as there may be differences in the screening tools and how they are used to assess baseline behaviours in other countries.

5.3.2 Skills in referral and signposting support

Defined as referral for treatment or signposting support by others.

Evidence from three qualitative studies (Dillman 2010 [++], Murray 2012 [++] and Robinson 2010 [++]) and two systematic reviews (Greaves 2011 [++] and van Achterberg 2010 [++] suggests that referral for treatment requires skill:

- Diabetes educators identified a lack of skills in making appropriate exercise related referrals and requested training in this (Dillman 2010)
- Suggesting or signposting support by others was a key facilitator to lifestyle behaviour change in individuals at high risk of cardiovascular events (Murray 2012 and Robinson 2010) and in encouraging physical activity and dietary interventions in people at risk of diabetes (Greaves 2011 and Achterberg 2010)

Evidence from one systematic review (Williams 2011 [+]) suggests that the precise nature of the support offered is important because the BCT 'plan social support/social change' was a technique associated with lower self-efficacy and lower physical activity effect.

Applicability

This study is partly applicable to the UK context. As the training of diabetes educators in one Canadian study (Dillman 2010) may differ from the UK or Dutch training provided in the other studies, for example.

5.3.3 Skills in developing motivation and enabling action

Defined as taught skills in reflective listening, empathy, self-efficacy and providing feedback. The capacity to implement behaviour change in a manner consistent with its underlying philosophy and the ability to structure consultations are encompassed by this evidence statement.

Evidence comes from three qualitative studies (Casey 2009 [++], Jansink 2010 [++], Murphy 2011 [++]) that suggest skill in developing participant motivation is a required competence. The aspects perceived as important for this skill are:

- Monitoring for an exercise programme (Casey 2009)
- Training for practice nurses in how to overcome a perceived lack of motivation in their patients (Jansink 2010)
- A shift towards collaboration and support as determinants of self-management (self-efficacy) (Murphy 2011)

There is evidence from one intervention study (French (2012 [+]) that 'enabling action' as a separate skill (encompassing goal setting, action planning and coping planning) often follows developing motivation but is associated with more effect if administered alongside each other (French 2012).

Applicability

These studies, conducted in the UK and Ireland, are directly applicable to the UK context.

5.3.4 Skills in providing feedback

Evidence comes from one systematic review (Michie 2009 [++]) that supports providing feedback on performance and prompting review of behavioural goals in healthy eating and physical activity interventions. These techniques, derived from Control Theory, were significantly more effective at inducing behaviour change than those not derived from this theory.

Applicability

This UK research is directly applicable to UK settings, providers and interventions.

5.3.5 Skills in delivering brief and very brief interventions

Evidence comes from one focus group study (Broyles 2012 [++]) for brief alcohol interventions delivered by nurses suggesting that there are barriers and facilitators to competence in delivering brief interventions.

The barriers identified were:

- Lack of alcohol-related knowledge and skills
- Limited interdisciplinary collaboration and communication around alcohol-related care
- Inadequate alcohol assessment protocols and poor integration with the electronic medical record
- Concerns about negative patient reaction and limited patient motivation to address alcohol use
- Questionable compatibility of screening, brief intervention and referral to treatment with the acute care paradigm and nursing role
- Logistical issues (e.g., lack of time/privacy)

The facilitators of nurse-delivered screening, brief intervention and referral to treatment focused on provider- and system-level factors related to:

- Improved provider knowledge, skills, communication, and collaboration
- Expanded processes of care and nursing roles
- Enhanced electronic medical record features

5.3.6 Skills in action planning, goal setting and problem solving

Evidence comes from one qualitative study (Walters 2012 [+], two systematic reviews (Williams 2011 [+], Michie 2009 [++]) and two reviews (Battersby 2010 [+] and Michie 2011 [+]) that suggest action planning, goal setting and problem solving are skills appreciated by providers. Though the exact training component was often not specified, training in the following was thought to be required:

- Goal setting; action planning and problem solving; self-management support theory and practice. These helped participants “develop and personalise behaviour change strategies” (Walters 2012)
- Action planning enhanced self-efficacy scores for patients (Williams 2011)
- Goal setting and prompting review of behavioural goals, but not action planning itself was associated with effectiveness (Michie 2009)
- Collaborative priority and goal setting along with collaborative problem solving is listed in a qualitative review of reviews and meta-analyses derived from a thematic content analysis (Battersby 2010)
- Problem solving was also listed in the consensus building study that identified the competences needed to deliver behavioural support for smoking cessation ‘*Maximising self-regulatory capacity and skills (e.g. ability to facilitate barrier identification and problem solving’* (Michie 2011)

5.3.7 Skills in encouraging self-management

Evidence from two qualitative studies (Murphy 2011 [++], Walters 2012 [++]) suggest encouraging self-management as a competency.

- Interviewing 40 people with type 1 diabetes in Ireland the capacity to successfully self-manage their condition required a collaborative supportive relationship between providers and people with diabetes. These were identified as important determinants of self-management (Murphy 2011)
- Self-management support was successfully taught as a skill in a telephone health-mentoring intervention to nurses (Walters 2012)

Applicability

This Australian and Irish research is directly applicable to UK settings, providers and interventions.

5.3.8 Advanced skills for group counseling

Defined as group counseling skills, making use of prompts, cues and incentives, training.

Evidence from one review (Michie 2009 [++]) suggests three competencies are needed to deliver behavioural support for smoking cessation. These were cited in two or more source documents and at least two RCTs:

- Encourage group discussions
- Encourage group tasks that promote interaction and/or bonding
- Encourage mutual support

Applicability

This UK research is directly applicable to UK settings, providers and interventions.

5.3.9 Advanced skills in maintaining change by making use of prompts and relapse prevention

Evidence from two systematic reviews of randomised controlled trials, one of complex behaviour interventions for obese adults with obesity related co-morbidities (Dombrowski 2010 [++]) and one of behaviour change techniques in healthy eating and physical activity interventions (Michie 2009 [++]), suggests that increasing the numbers of identified BCTs is not necessarily associated with better outcomes. Skills in relapse prevention and prompting practice or follow up prompts could be linked to more successful interventions.

The competence to use prompts and to focus on relapse prevention by managing obstacles, could be important to obesity as a behaviour change target because it is one that requires a prolonged change in habits.

The experience of patients or providers in providing prompts and cues was not commonly described in the qualitative research identified.

Applicability

This UK research is directly applicable to UK settings, providers and interventions.

6 Discussion

This review of qualitative studies aims to answer the research question “what are the characteristics and competencies required to deliver behaviour change interventions in those delivering behaviour change interventions?”

Health and healthcare care increasingly relies on an individual’s ability to change behaviour and for professionals to help them to do so across a broad spectrum of health areas.

The effects vary according to behaviour target. In this review the targets of individual level interventions are sexual health, smoking, alcohol, diet and physical activity behaviours.

The following characteristics were found to be valued by patients and when present were recognised as important by providers:

- Being supportive
- Being motivating
- Being empathetic

The following knowledge was recognised as a facilitator by providers (providers may mention the lack of these competencies as barriers to changing behaviour):

- Knowledge about health conditions
- Knowledge about behaviour change and theories
- Ability to communicate information

The following skills were recognised as facilitators by providers (providers may mention the lack of these competencies as barriers to changing behaviour):

- Skills in assessing individuals
- Skills in referral and signposting support
- Skills in developing motivation and enabling action

- Skills in providing feedback
- Skills in delivering brief and very brief interventions
- Skills in action planning, goal setting and problem solving
- Skills in encouraging self-management
- Advanced skills for group counselling
- Advanced skills in maintaining change by making use of prompts and relapse prevention

Strengths

This thematic synthesis used a wide search for qualitative literature, it is part of a coherent set of reviews that use a shared BCT taxonomy. Conceptual saturation in terms of the perception of barriers due to lack of skills, lack of time, lack of knowledge and fear of a negative patient reaction was reached early suggesting that there is reasonably strong agreement on the main themes across studies. Detail of training required for specific interventions is offered in manuals and these provide a rich source of tools for assessing patients or of information for those needing this. Competency frameworks already list agreed competencies and these map well to those identified in this thematic synthesis.

The underlying qualitative research was of good or moderate quality.

Limitations

The review does not include interventions that take a community or societal approach to behaviour change or those that predominantly use 'environmental' triggers to effect behaviour change. This may limit the applicability of this review to interventions that take a more multifactorial approach, use unselected populations or include environmental redesign.

Sexual health interventions, for example those that promote the use of condoms for preventing HIV or other infections, were poorly represented in this search results. No evidence statements have been made relevant to this area.

As few studies were identified that assess competency directly or measure fidelity of delivery alongside quantitative results, it was not possible to directly infer how effective competence-based training might be in improving the uptake or success of behaviour change interventions. Those studies that did do this were assessing motivational interviewing for brief interventions targeting addictive behaviours (alcohol or smoking).

The terminology in qualitative studies was not used consistently. Concepts such as motivation, self-efficacy and support appear to hold a different meaning for different researchers from different countries making the applicability of some findings less direct. A common, agreed set of definitions for these concepts and for the behaviour change techniques described in research would help in any future specifications of competence

Gaps

There are some gaps in the identified qualitative research in terms of skills identified in manuals or competency frameworks for which no qualitative evidence was identified. For example; group facilitating as a skill or barrier to behaviour change.

Patient experience has been captured in some qualitative research reported, but the search for this has not been exhaustive. Evidence on patient views was included where it adds depth to the provider views of required skills and training.

Particularly important were the views of patients/clients on some aspects of provider characteristics such as consulting style (being supportive, empathetic or motivating was mentioned), however as provider skills were the main focus of this review no attempt was made to pursue this theme further.

Four other themes identified in manuals (assistance, engagement, responsibility and confidentiality) were rarely reported as themes in the qualitative research identified.

Two additional competencies are poorly specified in qualitative research, though adequately described in manuals and frameworks: skills in providing menus or choice in behaviour change techniques and skills in adapting behaviour change techniques for target behaviours.

Themes that were less well represented in the qualitative literature include the flexibility and adaptability needed to tailor BCTs and interventions to client needs, use of prompts and cues as specific BCTs and the competencies needed to deliver BCTs in a group setting such as those needed to maintain social cohesion within groups.

Special groups

Disability, socioeconomic status and other groups such as those with learning disability may need tailoring of interventions to suit personal characteristics. No qualitative studies describing views of how this should be done were identified.

Motivational interviewing is well represented but the qualitative literature does not often report in detail of skills or knowledge required or perceived as needed for this. There are mixed results in how well motivational interviewing is delivered.

Some studies report difficulties in transitions to self-care, however people with diabetes strongly represent the view that ‘being in control’ and gaining confidence and knowledge are all important in developing the ability to self-manage.

Fear of damaging the patient relationship was an emotion expressed by some professionals. This was acknowledged as a barrier to initiating discussions on smoking cessation, for example. The skill to overcome this or to work with such resistance was not easily ascribed to a single competence or concept.

This report has found valuable material within manuals, particularly those focussed on alcohol screening and brief interventions or very brief

interventions for smoking cessation. These provide further insight into how to deliver these important interventions.

Conclusions

The need for training or skill in delivering specific behaviour techniques are expressed in the qualitative literature. Providing feedback, delivering action planning, goal setting, and problem solving are well represented and if effective for specific target areas, could be an important focus for training.

The professional characteristics of those delivering interventions are those of professionalism (including being knowledgeable and being able to communicate information), being supportive, empathetic and motivating. A focus on the specific skills required to develop motivation and to promote external support from family, friends and others were seen as important. Developing skills in fostering self-management and transitions from programmes were also seen as valuable.

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7 References

Abraham C, Michie S. A taxonomy of behavior change techniques used in interventions. Health Psycho. 2008;27(3):379-87.

American College of Surgeons, U.S.Department of Health, U.S.Department of Transportation. Alcohol screening and brief intervention (SBI) for trauma patients: committee on trauma quick guide. (SMA) 07-4266. Washington (DC): U.S. Government Printing Office; 2007. Available from: http://www.facs.org/trauma/publications/sbirtguide.pdf.

American Public Health Association and Education Development Center. Alcohol screening and brief intervention: a guide for public health practitioners. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2008. Available from: http://www.integration.samhsa.gov/clinical-practice/Alcohol_screening_and_brief_interventions_a_guide_for_public_health_practitioners.pdf.

Australian Government Department of Health and Ageing. Alcohol and Other Drugs: A Handbook for Health Professionals. [Canberra]: Australian Government; 2008.

Battersby M, Von K, Schaefer J et al. Twelve evidence-based principles for implementing self-management support in primary care. Jt Comm J Qual Patient Saf. 2010;36(12):561-70.

Breckon JD, Johnston LH, Hutchison A. Physical activity counseling content and competency: a systematic review. J Phys Act Health. 2008;5(3):398-417.

Broyles LM, Rodriguez KL, Kraemer KL et al. A qualitative study of anticipated barriers and facilitators to the implementation of nurse-delivered alcohol screening, brief intervention, and referral to treatment for hospitalized patients in a Veterans Affairs medical center. Addict.Sci Clin Pract. 2012;7(1):7.

Carr SM, Lhussier M, Forster N et al. An evidence synthesis of qualitative and quantitative research on component intervention techniques, effectiveness, cost-effectiveness, equity and acceptability of different versions of health-related lifestyle advisor role in improving health. Health Technol Assess. 2011;15(9):1-284.

Casey D, De Civita M., Dasgupta K. Understanding physical activity facilitators and barriers during and following a supervised exercise programme in Type 2 diabetes: a qualitative study. Diabet Med. 2010;27(1):79-84.

Cavill N, Hillsdon M, Anstiss T. Brief interventions for weight management. Oxford: National Obesity Observatory; 2011. Available from: http://www.noo.org.uk/NOO_pub/briefing_papers.

Coghill N, Cooper AR. Motivators and de-motivators for adherence to a program of sustained walking. Prev Med. 2009;49(1):24-7.

Craig P, Dieppe P, Macintyre S et al. Developing and evaluating complex interventions: new guidance. London: Medical Research Council; 2008. Available from: http://www.mrc.ac.uk/consumption/idcplg?IdcService=GET_FILE&dID=15585&dDocName=MRC004871&allowInterrupt=1.

Department of Veterans' Affairs. Alcohol Screening and Brief Intervention manual (AS+BI): a skills-based intervention and training resource for veteran service providers. Canberra: Commonwealth of Australia; 2009. Available from: http://www.dva.gov.au/service_providers/Documents/manual_AS+BI.pdf.

DH. The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process. London: Department of Health; 2004. Available from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843.

Dillman C, Shields C, Fowles J et al. Including physical activity and exercise in diabetes management: diabetes educators' perceptions of their own abilities and the abilities of their patients. Can J Diabetes. 2010;34(3):218-26.

Dixon D, Johnston M. Health behaviour change competency framework: competences to deliver interventions to change lifestyle behaviours that affect health. Edinburgh: DHP; 2010. Available from: http://www.healthscotland.com/uploads/documents/14543-HBCC_framework1.pdf .

Dombrowski SU, Sniehotta FF, Avenell A et al. Identifying active ingredients in complex behavioural interventions for obese adults with obesity-related co-morbidities or additional risk factors for co-morbidities: a systematic review. Health Psychol Rev. 2012;6(1):7-32.

Escolar-Reina P, Medina-Mirapeix F, Gascon-Canovas JJ et al. How do care-provider and home exercise program characteristics affect patient adherence in chronic neck and back pain: a qualitative study. BMC Health Serv Res. 2010;10:60.

French DP, Stevenson A, Michie S. An intervention to increase walking requires both motivational and volitional components: a replication and extension. Psychol Health Med. 2012;17(2):127-35.

Gaume J, Gmel G, Daeppen JB. Brief alcohol interventions: do counsellors' and patients' communication characteristics predict change? Alcohol & Alcoholism. 2008;43(1):62-9.

Ghodse H, McNally L, Oyefeso A et al. Reduction in tobacco addiction - training manaual a guide. London: St George's, University of London; 2008. Available from: www.sgul.ac.uk/research/projects/icdp/pdf/retad-training-manual.pdf.

Greaves CJ, Sheppard KE, Abraham C et al. Systematic review of reviews of intervention components associated with increased effectiveness in dietary and physical activity interventions. BMC Public Health. 2011;11:119.

Gual A, Anderson P, Segura L et al. Alcohol and primary health care: training programme on identification and brief interventions. Barcelona: Department of Health of the Government of Catalonia; 2005. Available from: http://www.gencat.cat/salut/phepa/units/phepa/pdf/tripa_training_ok.pdf.

Health Foundation. Research scan: training professionals in motivational interviewing. London: The Health Foundation; 2011. Available from: http://www.health.org.uk/public/cms/75/76/313/3082/training%20in%20motivational%20interviewing%20research%20scan.pdf?realName=dF7nmm.pdf.

Health Service Executive. A guiding framework for education and training in screening and brief intervention for problem alcohol use. Kildare: Office of the Nursing & Midwifery Services Director; 2012. Available from: http://www.hse.ie/eng/services/Publications/topics/alcohol/interventionforproblemalcoholabuse.pdf.

Hutchison AJ, Breckon JD, Johnston LH et al. Physical activity behavior change interventions based on the transtheoretical model: a systematic review. Health Educ Behav. 2009;36(5):829-45.

Huttunen-Lenz M, Song F, Poland F. Are psychoeducational smoking cessation interventions for coronary heart disease patients effective? Meta-analysis of interventions. Br J Health Psychol. 2010;15(Pt 4):749-77.

Jansink R, Braspenning J, van der Weijden T et al. Primary care nurses struggle with lifestyle counseling in diabetes care: a qualitative analysis. BMC Fam Pract. 2010;11:41.

Lai DT, Cahill K, Qin Y et al. Motivational interviewing for smoking cessation. Cochrane Database Syst Rev. 2010;(1):CD006936.

Mahony G, Haracz K, Williams LT. How mental health occupational therapists address issues of diet with their clients: a qualitative study. Aust Occup Ther J. 2012;59(4):294-301.

Martino S, Ball SA, Gallon SL et al. Motivational interviewing assessment: supervisory tools for enhancing proficiency. Salem (OR): Oregon Health and Science University; 2006. Available from: http://ctndisseminationlibrary.org/PDF/146.pdf.

Martino S, Ball SA, Nich C et al. Community program therapist adherence and competence in motivational enhancement therapy. Drug Alcohol Depend. 2008;96(1-2):37-48.

McCarthy DE, Piasecki TM, Jorenby DE et al. A multi-level analysis of non-significant counseling effects in a randomized smoking cessation trial. Addiction. 2010;105(12):2195-208.

McEwen A, West R, Preston A. Triggering anti-smoking advice by GPs: mode of action of an intervention stimulating smoking cessation advice by GPs. Patient Educ Couns. 2006;62(1):89-94.

Michie S, Rumsey N, Fussell A et al. Improving health: changing behaviour. NHS health trainer handbook. London: Department of Health; 2008. Available from: http://eprints.uwe.ac.uk/12057/1/dh_085778.pdf.

Michie S, Abraham C, Whittington C et al. Effective techniques in healthy eating and physical activity interventions: a meta-regression. Health Psychol. 2009;28(6):690-701.

Michie S, Churchill S, West R. Identifying evidence-based competences required to deliver behavioural support for smoking cessation. Ann Behav Med. 2011;41(1):59-70.

Michie S, Richardson M, Johnston M et al. The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions. Ann Behav Med. 2013. 46(1):81-95.

Moyers TB, Miller WR, Hendrickson ML. How Does Motivational Interviewing Work? Therapist Interpersonal Skill Predicts Client Involvement within Motivational Interviewing Sessions. J Consult Clin Psychol. 2005;73(4):590-8.

Murphy K, Casey D, Dinneen S et al. Participants' perceptions of the factors that influence Diabetes Self-Management Following a Structured Education (DAFNE) programme. J Clin Nurs. 2011;20(9/10):1282-92.

Murray J, Honey S, Hill K et al. Individual influences on lifestyle change to reduce vascular risk: a qualitative literature review. Br J Gen.Pract. 2012;62(599):e403-e410.

NHS Health Scotland. Delivery of alcohol brief interventions: a competency framework. Edinburgh: NHS Education for Scotland; 2010. Available from: http://www.healthscotland.com/uploads/documents/12157-ABI%20Competency%20Framework.pdf.

NHS Yorkshire and The Humber. Prevention and lifestyle behaviour change a competence framework. Leeds: NHS Yorkshire and The Humber; 2010. Available from: http://www.yorksandhumber.nhs.uk/document.php?o=5021.

O'Sullivan TL, Fortier MS, Faubert C et al. Interdisciplinary physical activity counseling in primary care: a qualitative inquiry of the patient experience. J Health Psychol. 2010;15(3):362-72.

Patwardhan PD, Chewning BA. Ask, advise and refer: hypothesis generation to promote a brief tobacco-cessation intervention in community pharmacies. Int J Pharm Pract. 2009;17(4):221-9.

Rice VH, Stead LF. Nursing interventions for smoking cessation. Cochrane Database Syst Rev. 2008;(1):CD001188.

Robinson M, Robertson S, McCullagh J et al. Working towards men's health: Findings from the Sefton men's health project. Health Educ J. 2010;69(2):139-49.

Taub A, Allegrante JP, Barry MM et al. Perspectives on Terminology and Conceptual and Professional Issues in Health Education and Health Promotion Credentialing. Health Educ Behav. 2009;36(3):439-50.

Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Med Res.Methodol. 2008;8:45.

Thomsen T, Esbensen BA, Samuelsen S et al. Brief preoperative smoking cessation counselling in relation to breast cancer surgery: a qualitative study. Eur J Oncol Nurs. 2009;13(5):344-9.

van Achterberg T, Huisman-De Waal GGJ, Ketelaar NABM et al. How to promote healthy behaviours in patients? An overview of evidence for behaviour change techniques. Health Promot Int. 2011;26(2):148-62.

Walters JA, Cameron-Tucker H, Courtney-Pratt H et al. Supporting health behaviour change in chronic obstructive pulmonary disease with telephone health-mentoring: insights from a qualitative study. BMC Fam Pract. 2012;13:55.

Williams SL, French DP. What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behaviour--and are they the same? Health Educ Res. 2011;26(2):308-22.