UNIVERSITY OF OXFORD

Managing overweight and obese adults: evidence review

Review 2

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Note: Throughout, highlighted 'confidential' refers to material that has been removed from this report as it was submitted to NICE commercial in confidence.

Declarations of interest: Paul Aveyard is an author of one included study (1) and Susan Jebb is an author of one included study (2). Paul Aveyard and Susan Jebb are currently involved in another two trials, one of which has treatment courses donated by Weight Watchers and the other which involves treatment courses donated by Slimming World and Rosemary Conley. Paul Aveyard and Susan Jebb have been out for meals courtesy of Weight Watchers and Nestle (owners of Jenny Craig). Susan Jebb writes for a magazine published by Rosemary Conley Enterprises and receives a fee.

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Introduction

This review aims to examine evidence about how multicomponent behavioural weight management programmes (BWMPs) are commissioned, run and viewed by users and health professionals. It is split into five discreet areas: users; services; referral; commissioning; and training. Whereas previous work (Review 1) was primarily quantitative in nature and answered questions on effectiveness, this review (Review 2) contains both qualitative and quantitative data, of varying nature and aims.

Methods

The search strategies and methods used varied for each section of the review. Database and grey literature searching was used for users, services, and referral sections. Grey literature searching was done for guidance and information relevant to commissioning, and the training section relies solely on data from 1a and 1b, and relevant information gleaned from users, services and referral questions. Assessment for inclusion and data extraction were undertaken by a single reviewer. We included both quantitative and qualitative data. Internal and external validity assessments followed the methods outlined in the CPHE manual. We created an evidence table for each included study, and results were narratively synthesized. No statistical analyses were planned or conducted.

Results

We ran one database search to cover questions on users, services, and referral. We retrieved 2,427 references in total. Within these, 1,256 references were retrieved in searches specific to review areas, and hence were screened at title/abstract level. We included 28 studies overall, the vast majority of which contributed to multiple review questions.

Users

The literature search identified 24 pieces of evidence relating to users' views of behavioural weight loss programmes addressing both commercial and NHS funded services. One systematic review [in press] was also incorporated. The majority of views were positive and came from those who had attended such services. In general, most people were motivated to lose weight for issues of either appearance or health, which prompted them to seek help. Papers also highlighted participants' views about the effectiveness of such programmes including a key role for an activity component, the personality and motivation of the group leader, the simplicity of the diet being suggested and the need for longer term follow ups. Some papers concluded that a group approach does not work for everyone and that some individuals wanted a more individualised and tailored approach to weight management. Those exploring NHS funded programmes also argued that endorsement by the GP through referral or funding may help weight loss. The papers identified provided some limited insights into non adherence and the range of barriers to attending a weight loss programme. These included commitments to work or home life and time, cost, fear of being judged and embarrassment, and not losing weight.

Services

Eleven studies were identified that had information relating to the features of services that determine whether, where, and how they are provided, and how they interact with other elements of the public health system to facilitate or hinder use of services. Findings were limited by a lack of

evidence, and especially by a lack of quantitative data, for example data on degrees of practitioner involvement or comparisons of different communication pathways. From the included studies, the following elements were perceived to impact provision and use of BWMPs: perceived effectiveness of programmes; perceived role of clinicians and other primary care staff and their confidence in addressing obesity with their patients and their incentives for which to do so; cost of programme; engagement and involvement primary care staff; routes of communication; clarity of referral system and criteria and more general knowledge of and training about BWMPs within primary care; and location of meetings.

Referral

Six studies were identified which provide some insights into the referral process and the factors that relate to uptake and adherence to weight loss programmes. The synthesis identified five key themes: raising the issue of weight, taking in house action, the referral process, uptake of the initial appointment, and completion of the initial funded programme. Of the six included studies, three evaluated commercial programmes which involved some element of referral from primary care, two evaluated NHS weight management programmes, and the final study did not focus on any one programme specifically. There was no evidence that any one referral scheme or system led to more enrolment, engagement, or weight loss, than any other referral scheme. Where described, most referrals were made by the primary care team, particularly the GP, and were often a consequence of a health check which had facilitated the process of raising the issue of the patient's weight. The studies suggested that the primary care team may add a sense of accountability. Some studies reported referral criteria and central screening processes, whereas in others it was left to primary care staff to decide suitability on an individual basis.

Commissioning

Our search found four pieces of guidance to commissioners which are derived from expert opinion informed by reviews of relevant literature, though one piece of guidance is primarily orientated towards commissioning hospital-based weight management services. One piece of guidance states that services should be commissioned that operate in line with NICE guidelines on the management of obesity. One piece of guidance states that services should report on a comprehensive range of baseline and follow-up data, though another piece of guidance reflects uncertainty about the practicability of assessing changes in diet and physical activity. One piece of guidance states that commissioned services should report data on attendance and weight loss and that these be used as evidence that the service is effective. When applied to findings from Review 1a, the standards set forward were able to differentiate ineffective from effective services.

Training

We did not conduct a search for new evidence in this area but instead considered findings from Review 1 and from sections in Review 2 on users, services, and referral. Findings in Review 2 suggest some additional areas that training could focus on (e.g. motivating participants, providing evidence of programme effectiveness, understanding of the referral process), but these suggestions are purely speculative in nature. There is evidence from Review 1a that BWMPs delivered by people who have received training in weight management can lead to significantly greater weight loss than multiple weight management sessions delivered by people who have not received specific weight management training. However, we found no evidence that any particular type of training leads to more effective BWMPs. The majority of interventions in Review 1 were delivered by people from a

range of backgrounds, and (where reported) training ranged from two hours to four days, with lay people tending to receive the most training. Findings from Review 1 suggest that behavioural weight management programmes involve people who are trained in counselling on diet and exercise (though they need not be the same person), in setting and calculating energy intake goals, and in setting and reviewing behavioural and outcome goals, as well as in a range of other behavioural change techniques.

Conclusions

Data from Review 2 is about experiences with and implementation of BWMPs. It aims to paint a more complete picture than data from Review 1 alone, but is limited by the parameters of the research and the nature of the available evidence. Searches were systematic but not comprehensive, and evidence may also be limited by conflicts of interest, a bias towards inclusion of people with more positive views of BWMPs, and a lack of quantitative data for some areas.

Summary of evidence statements

Please see the final agreed evidence statements for this guideline which are contained in a separate document on the NICE website. The final statements reflect conclusions drawn from reviews 1a, 1b, 1c and 2 (as appropriate)

Conclusions from evidence statements are summarised below (full evidence statements can be seen in 'Evidence statements'). All evidence comes from studies conducted in the UK. Unless stated otherwise, data is for weight loss at 12 to 18 months. In the instances where it is stated that there is 'no evidence' on a topic, this refers to the reviewers finding no evidence. As this was not intended to be a comprehensive review, it could be possible that relevant evidence exists which has not been found.

- There is moderate evidence that people within BWMPs were motivated to lose weight for reasons of health and appearance. (Statement 2.1)
- There is inconsistent evidence as to whether group support is perceived to be beneficial within BWMPs. (Statement 2.2)
- CONFIDENTIAL (Statement 2.3)
- There is weak evidence that users perceive the routine of regular meetings as a benefit of attending a BWMP. (Statement 2.4)
- There is strong evidence that users of BWMPs with supervised physical activity perceived this to be an effective component, and strong evidence that users of BWMPs without supervised physical activity would have liked it to have been incorporated. There is strong evidence that users perceive the personality and approach of the group leader to impact the effectiveness of the programme. (Statement 2.5)
- There is strong evidence that users and potential users of BWMPs prefer diets with a simple message, which do not include banned foods, are considered family friendly, do not incur any extra cost and are not perceived to be repetitive or boring. (Statement 2.6)
- There is strong evidence that practical issues were perceived by users to be the main barriers to attendance at BWMPs. These included childcare, work, cost and time. There is moderate evidence that feeling judged, stigmatized or embarrassed was a further barrier to attendance. Finally, there is weak evidence that users perceived not losing weight to be a barrier to further attendance. (Statement 2.7)

- There is no evidence as to what structural components facilitate BWMP delivery. However, there is moderate evidence that the following structural components are perceived to act as facilitators to provision and delivery of BWMPs: active GP and primary care staff involvement and clear routes of communication between primary care staff and BWMP providers. (Statement 2.8)
- There is no evidence as to whether the opinions and attitudes of primary care staff and commissioners facilitate BWMP provision. However, there is moderate evidence that primary care staff and commissioners hold the following positive opinions and attitudes: perceptions that BWMPs are effective at inducing weight loss; confidence amongst primary care staff in their ability to raise and tackle the topic of obesity with patients; and perceiving obesity treatment to fall within their role. (Statement 2.9)
- There is no evidence as to whether the opinions and attitudes of primary care staff and commissioners act as barriers to BWMP provision. There is moderate evidence that some people directly and indirectly involved with provision of BWMPs hold negative attitudes around the effectiveness of these programmes. There is also moderate evidence that some health care providers perceive obesity management to be outside of their primary role and that some health care providers perceived issues with insufficient training, knowledge, or ability to motivate patients. (Statement 2.10)
- There was no evidence with which to judge the impact of referral programmes on subsequent take up and adherence to BWMPs. There was weak evidence that participants who were referred by a GP had an increased sense of obligation and responsibility to attend due to the use of public funding and accountability to the GP. There is moderate evidence that some primary care staff lack adequate understanding of the referral process to BWMPs. (Statement 2.11)
- There is no evidence that commissioning in one way compared to commissioning in another way leads to better outcomes for users of behavioural weight loss services. There are four pieces of guidance to commissioners which are derived from expert opinion informed by reviews of relevant literature. There was evidence from Review 1a that these standards did differentiate ineffective from effective services. (Statement 2.12)
- There is no evidence that any particular type of training leads to more effective BWMPs. There is strong evidence from a meta-analysis that BWMPs can lead to significantly greater weight loss than multiple weight management sessions delivered by people who have not received specific weight management training. (Statement 2.13)

Commonly used terms and abbreviations

ASSIA - Applied Social Sciences Index and Abstracts

BIOSIS - research databases provide you with today's most current sources of life sciences information, including journals, conferences, patents, books, review articles, and more. You can access multidisciplinary coverage via specialized indexing such as MeSH ® disease terms, CAS ® Registry Numbers, Sequence Databank Numbers and Major Concepts

BMI - Body Mass Index: A simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m^2)

BOCF - Baseline observation carried forward: a method to handle missing data from treatment discontinuation, where people with missing data at follow-up are assumed to weigh the same amount as they did at the start of the study (for detailed explanation, see Review 1a; Appendix 1)

BWMPs - Multicomponent behavioural weight management programmes: To be considered a multicomponent BWMP, a programme must include diet, physical activity, and behavioural therapy components (for example, counselling sessions)

CDSR - Cochrane Database of Systematic Reviews

CPCI - The Comprehensive Primary Care (CPC) initiative is a multi-payer initiative fostering collaboration between public and private health care payers to strengthen primary care

CPHE - Centre for Public Health and Equity

External validity - The extent to which results provide a correct basis for generalisations to other circumstances

Follow-up - The observation over a period of time of study/trial participants to measure outcomes under investigation

GP - General Practitioner

NICE - National Institute for Health and Care Excellence

NR - not reported

PCT - Primary Care Trust

Quality - A notion of the methodological strength of a study, indicating the extent of bias prevention (judgement criteria outlined in Methods section)

SCI - The Science Citation Index

Introduction

This review examines evidence about how multicomponent behavioural weight management programmes (BWMPs) are commissioned, run and viewed by users and health professionals. It is split into five discreet areas: users; services; referral; commissioning; and training. As such, it brings together several pieces of work which are largely conceptually separate, and consists of reviews of primary data, drawing inferences from our prior reviews, and an examination of guidance on commissioning. Whereas previous work (Review 1) was primarily quantitative in nature and answered questions on effectiveness, this review (Review 2) contains both qualitative and quantitative data, of varying nature and aims.

Within this document, three pieces of work are reviews of primary evidence. We consider users' perspectives, which are followed by a separate section on the issues that services face in providing behavioural weight management programmes. We also examine the referral system and what we know about the effectiveness of the referral system in increasing attendance at and adherence to BWMPs. In this section we also explore what people feel about making referrals and the referral process. It is worth noting that these reviews are systematic but they do not aim to be comprehensive. In particular, the process of reviewing was at the outset required to fall within certain parameters: namely, time and budget, and the approach pre-specified by NICE. The data in the reviews are confined to studies published in English since 1995 and conducted in the UK. In addition, the searches were based upon those used to identify the effectiveness of weight loss programmes from Review 1, and we aimed to maximise specificity in the search process.

In addition to the three sections mentioned above, two pieces of work that do not derive from primary data are also included in this review. We examine guidance on commissioning, monitoring, and evaluating services and the degree to which this guidance is supported by the evidence. We also examine the training needed by people delivering behavioural weight management programmes. We draw on findings throughout Reviews 1 and 2 to examine the competencies needed and, by implication, the skills that such programme deliverers may need.

Methods

A protocol for review 2 was agreed with NICE before starting work (Appendix 1). Key methods are summarised below.

Scope

This review aims to examine evidence about how multicomponent behavioural weight management programmes are commissioned, run and viewed by users and health professionals. Reviews 1a, 1b and 1c examine the effectiveness of such programmes and the characteristics associated with greater effectiveness. Review 2 is split into five discreet areas: users; services; referral; commissioning; and training.

Review questions

The work for NICE was originally scoped to be answered in two parts: Review 1 and Review 2. In reality, Review 1 was separated into three sections, reviews 1a, 1b and 1c. Table 1 below lists the questions covered in each review.

Table 1 Review questions

Review section	Question
1a	How effective and cost-effective are multi-component lifestyle weight management programmes for adults?
1a	How does effectiveness vary for different population groups (for example, men, black and minority ethnic or low-income groups)?
1a	Are there any adverse or unintended effects associated with the use of LWMPs?
1b	How do components of behavioural weight loss programmes affect the outcome? (previously review 2, question 1)
1b	Is there evidence to support the best practice principles that NICE proposed in its 2006 guidance?
1c	What happens to the difference in weight between people treated on a behavioural weight loss programme and a control group in the longer term?
1c	How quickly does weight increase after the end of the programme and do the characteristics of the programme affect the rate of increase in weight?
1c	What interventions can maintain weight loss after the end of a behavioural weight loss programme? (previously review 2, question 4)
2: users	What are the views, perceptions and beliefs of adults in relation to lifestyle weight management programmes (whether or not they use such programmes)? How can overweight and obese adults from a diverse range of backgrounds be encouraged to join, and adhere to, these programmes? (previously review 2, question 3)
2: services	What barriers and facilitators affect the delivery of effective weight-management programmes for adults and how do they vary for different population groups? (previously review 2, question 5)
2: referral	What are the best practice principles for primary care when referring people to commercial, voluntary or community sector or self-help lifestyle weight management programmes? (previously review 2, question 6)
2: commissioning	What are the best practice principles for commissioners of lifestyle weight management services for adults? (previously review 2, question 7)
2: commissioning	How should lifestyle weight management programmes be monitored and evaluated locally? (previously review 2, question 9)
2: training	What training is needed for professionals involved directly or indirectly with lifestyle weight management programmes for adults? (previously review 2, question 8)

Searches

Search strategies for each question

The search strategies used varied for each area. These are summarised below:

- **Users:** database and grey literature searching, encompassing all sources listed below
- **Services:** database and grey literature searching, encompassing all sources listed below
- **Referral:** database and grey literature searching, encompassing all sources listed below
- **Commissioning:** grey literature searching for guidance and information relevant to commissioning
- **Training:** no new searches were run. Relies on data from 1a and 1b, and relevant information gleaned from users, services and referral questions

Database searches

For questions regarding users, services, and referral, we ran a set of database and grey literature searches, which were combined into one Reference Manager database. These references were then searched using the Reference Manager interface to highlight references to screen for the questions on users, services, and referral.

The detailed search strategy was agreed separately between reviewers and the CPHE's information specialist, and is reported in Appendix 2. We used the same electronic databases as we searched in Review 1 (Medline, Medline in Process, Embase, Psycinfo, Cochrane (CENTRAL, DARE, CDSR), Science Citation Index, Conference Proceedings Citation Index), with the exception of BIOSIS, which was judged not to be applicable to the questions in review 2. We used similar terms to those used in the Review 1 search but removed the filters that aimed to confine the search to randomised controlled trials and included terms to pick up specific keywords and text words.

Grey literature searching

We searched the National Obesity Observatory's and the Obesity Learning Centre's list of relevant service level evaluations. We also searched the following websites: Association for the Study of Obesity, European Association of the Study of Obesity, Joseph Rowntree Foundation, Scottish Government, and the Welsh Government. In addition, we searched through literature submitted as part of the call for evidence and sought evidence from our expert advisory panel. We conducted citation searches on relevant articles that we found using the Web of Knowledge interface.

Data collection, synthesis, and evaluation

Users, services and referral

As described above, this review covers five areas: users; services; referral; commissioning; and training. Specific searches were run for studies to include in the users, services, and referral areas. Searches were not conducted for new studies for the commissioning and training sections, as these sections instead draw upon information collected through other parts of the review process.

Study selection process

For each of these areas, assessment for inclusion was undertaken initially at title and/or abstract level (to identify potential papers/reports for inclusion) by a single reviewer (and a sample checked

by a second reviewer), and then by examination of full papers. A third reviewer was used to help adjudicate inclusion decisions in cases of disagreement. Where the research methods used or type of initiative evaluated were not clear from the abstract, assessment was based upon a reading of the full paper. We included both quantitative and qualitative data for each question.

Inclusion criteria

Inclusion criteria for users, services, and referral studies are summarized in table 2 below.

Table 2 Inclusion criteria

Area	Population and focus	Types of studies	Location
Users	• Adults (≥ 18 years) classified as overweight or obese, i.e. people with a BMI of ≥ 25 kg/m2 and ≥ 30 kg/m2, respectively. • Studies in children, pregnant women, and people with eating disorders were not included, nor studies specifically in people with a pre-existing medical condition such as diabetes, heart failure, uncontrolled hypertension or angina. • The studies concern views, perceptions and beliefs of adults towards starting weight loss programmes or towards continuing to attend them given that they have started.	Qualitative or quantitative cross-sectional or longitudinal studies, published since 1995.	Undertaken in any setting (e.g. community, commercial, primary care and online). Studies conducted in the UK only will be considered for inclusion.
Services	• The views of and experiences of service providers on how they interact with the users as well as the public health system, including commissioners and providers of other relevant services, such as primary care services. • The views of and experiences of commissioners of public health services about the characteristics of the particular providers on offer and their distribution and cost. • Descriptive studies that describe the distribution, costs or management practices of weight management services.	As above	Studies conducted in the UK only will be considered for inclusion.
Referral	• Adults defined as overweight or obese who are offered referral to weight loss programmes	As above, as well as randomised controlled trials	As above

Internal and external validity assessment

The internal and external validity assessments followed the methods outlined in the CPHE manual, either for quantitative data or qualitative data, using the assessment checklists, amendments to which were agreed with NICE. One reviewer appraised each study and consulted with colleagues over matters of uncertainty.

Data synthesis and presentation, including evidence statements

The lead reviewer extracted data in narrative form. We created an evidence table for each included study, the format of which was agreed with NICE before starting work. The themes in the evidence tables were then analysed by a reviewer to detect commonalities, and these results were narratively synthesized, with quotes used for illustrative purposes. No statistical analyses were planned or conducted.

Commissioning

We used 1a and 1b to identify which existing programmes are known to be effective and the effective components of weight loss services. We tested the standards set by the expert advisory group convened by the Department of Health in October 2012 and published in March 2013. This standard for commissioning and monitoring services was considered of as akin to the guideline for weight loss interventions produced by the BDA and described by NICE as best practice principles in

the existing 2006 NICE guidance on obesity. We used data from effective interventions in 1a to see whether the standards proposed are consonant with what was observed in the trials and whether it is possible to produce an effective service without meeting the standards or whether it is possible to meet the standards and yet be providing an ineffective service. In addition, we searched the guidelines database http://www.tripdatabase.com/ and the NOO website, for guidelines on commissioning and summarised these.

We considered the use of the National Obesity Observatory standard evaluation framework and examined whether the essential and desirable elements in the document have any evidence that they are essential to monitor and evaluate weight management services. We also consulted with the commissioner on our expert advisory panel regarding existing practice and information on monitoring and evaluating such programmes.

Training

The data to assess skills required by people delivering programmes came from Review 1a and Review 1b. In addition, the review team identified the skills needed by highlighting the behavioural change techniques involved in delivering successful programmes. We also consider information from users, services, and referral sections of review 2 to identify the skills, competencies and qualities of people delivering programmes, where possible.

Results

Search results and included studies

We ran one database search to cover questions on users, services, and referral. We then conducted specific sub searches within the results to find information for specific questions. After de-duplication, our database searches yielded 2286 references. Combined with a further 141 references from other sources, including the NICE call for evidence, we retrieved 2,427 references in total. Within these, 1,256 references were retrieved in at least one sub-search, and hence were screened at title/abstract level.

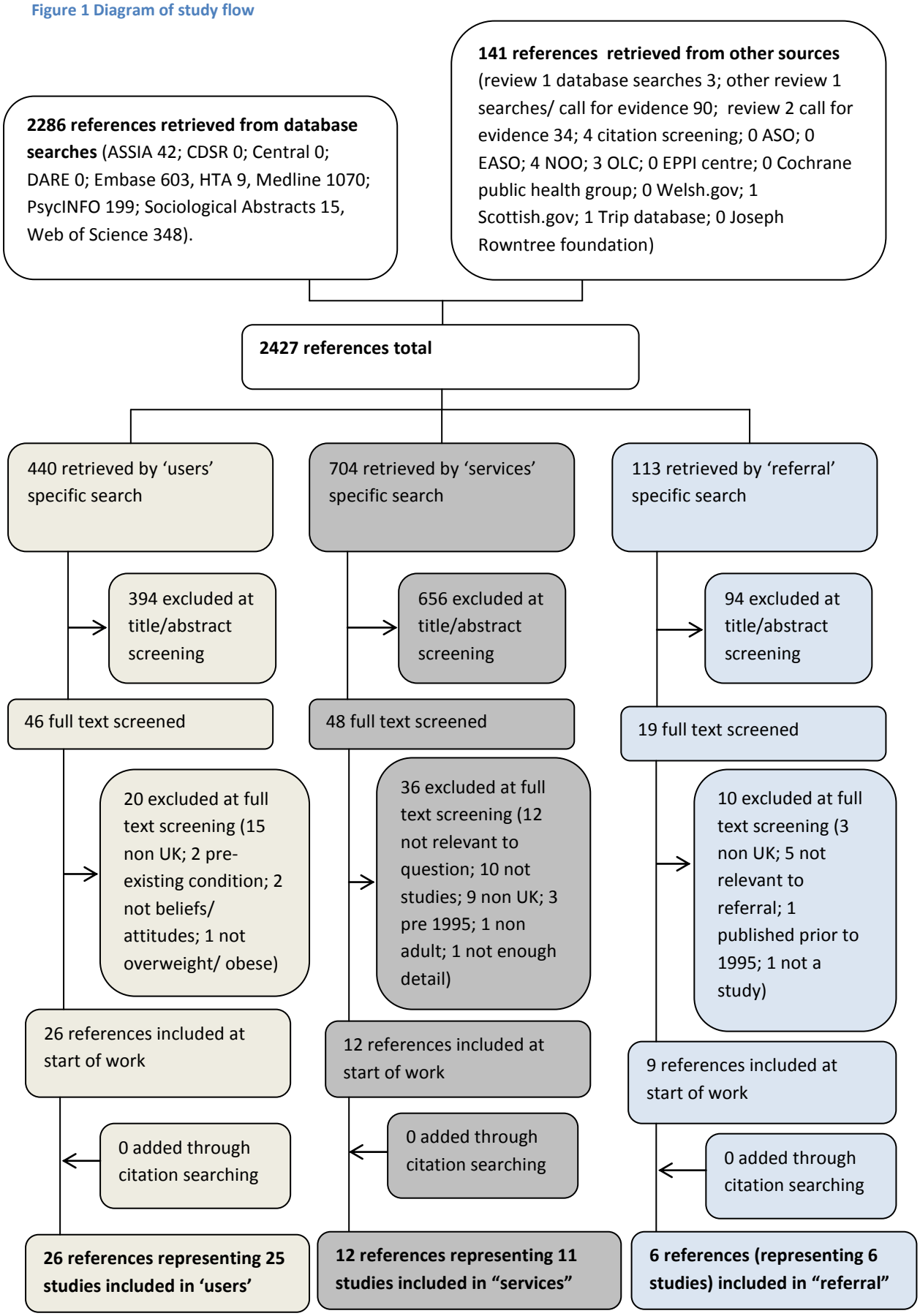
Figure 1 displays the search and screening process for each individual question. However, some references were screened for multiple questions. In total, we screened 84 full text articles, and excluded 56 at full text stage. We included 28 studies overall, the vast majority of which contributed to multiple review questions. Characteristics of included studies are summarized within each review section. Evidence tables for each included study can be found in Appendix 4, and details of external and internal validity ratings can be found in Appendices 5 and 6, respectively. Overwhelmingly, the most common reason for exclusion at full text stage was that the study was not conducted in the UK. A full list of studies excluded at full text stage, along with reasons for exclusion, can be found in Appendix 3.

All other results are reported by section, in the following order: users; services; referral; commissioning; and training. The questions addressed by these sections are reported in table 3 below.

Table 3 Review 2 section information

Section	Previous number	Question addressed
Users	3	What are the views, perceptions and beliefs of adults in relation to lifestyle weight management programmes (whether or not they use such programmes)? How can overweight and obese adults from a diverse range of backgrounds be encouraged to join, and adhere to, these programmes?
Services	5	What barriers and facilitators affect the delivery of effective weight-management programmes for adults and how do they vary for different population groups?
Referral	6	What are the best practice principles for primary care when referring people to commercial, voluntary or community sector or self-help lifestyle weight management programmes?
Commissioning	7 and 9	What are the best practice principles for commissioners of lifestyle weight management services for adults? How should lifestyle weight management programmes be monitored and evaluated locally?
Training	8	What training is needed for professionals involved directly or indirectly with lifestyle weight management programmes for adults?

Figure 1 Diagram of study flow



Users[1]

Scope and methods

This section relates to potential, current and past users of services and their views, perceptions and beliefs towards starting weight-loss programmes or towards continuing to attend them once they started.

The research questions are:

"What are the views, perceptions and beliefs of adults in relation to lifestyle weight management programmes (whether or not they use such programmes)?"

And

"How can overweight and obese adults from a diverse range of backgrounds be encouraged to join, and adhere to, these programmes?"

To answer these questions, we conducted a focussed search for qualitative or quantitative cross-sectional or longitudinal studies (see methods section), and also considered evidence submitted to NICE in the call for evidence process.

Results

The 'Users' specific search yielded 440 results (see 'Search'), 394 of which were excluded at title/abstract stage. Twenty further references were excluded at full text screening: 2 were not relevant to the question, 15 were not conducted in the UK, 2 were in individuals with pre-existing conditions and one was in a non-overweight/obese population (see Appendix 3).

Characteristics of included studies

After screening, 26 references were identified representing 25 studies. These are listed in table 4. Evidence tables for each included study can be found in Appendix 4. These studies included users' views of behavioural weight loss interventions including commercial weight management programmes, those provided through the NHS and those provided through local communities.

Of the 25 studies, 21 studies employed qualitative methods with interviews or focus groups. The call for evidence also produced a number of documents that were unpublished including reports for public and commercial bodies and student dissertations.

Some studies asked individuals about their attendance experiences of specific programmes whilst some studies took a more general approach and asked about experiences individuals had had at all programmes they had attended. The majority of studies reported the experiences of those who had attended and adhered to several sessions. In contrast, 3 studies attempted to collate the experience of non-attenders and/or non-completers (3),(4),(5). The findings are therefore somewhat biased towards the more positive views of those who started and mostly finished the different programmes.

17 studies were judged to be of high quality (++): all or most quality checklist criteria were fulfilled and conclusions were judged unlikely to alter. 3 studies were awarded (+) (6),(7),(8), most commonly

[1] Previously question 3

because of poor description of the characteristics of participants, lack of clarity over methods and creation of themes and lack of duplicate coding from interview or focus group transcripts. Four studies were rated as (-), with few or no criteria fulfilled and conclusions judged likely to alter. Reasons for study downgrading are detailed in the evidence tables (Appendix 4).

12 studies were rated as (++) on external validity, the extent to which the findings of the study were judged to be generalisable to the population in question. One study was rated (-) as (9),(5),(10),(11), neither the source population nor study population were clearly described (12).

One systematic review (13) (in press) was submitted as part of the NICE call for evidence and included alongside the other 25 studies . CONFIDENTIAL. Please note that information submitted in confidence has been removed from this report (as indicated by 'confidential' highlighted in yellow). Table 4 summarises the evidence sources and participant details.

Table 4: Included studies – 'users'

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Ahern et al. 2013 (3)	Qualitative	Explore accounts of UK participants' experiences of two weight-loss interventions (Jebb 2011 (2)).	16 female participants (9 from commercial programme and 7 from standard care)	++	++
Allan 2011 (14)	Qualitative	Compare and contrast leader's and attendee's experiences of health service and commercial weight-loss groups through in-depth interviews and group observations.	Interviews with group leaders (n = 11) and participants (n = 22).	++	++
Bidgood and Buckroyd 2005 (15)	Qualitative	Explore obese people's accounts of their experiences and feelings during their attempts to lose weight and to maintain a reduced weight	There were 18 participants: 2 men and 11 women.	++	+
Counterweight 2008 (16)	Qualitative	What are the key barriers and facilitators to patient and staff engagement with Counterweight delivered via primary care?	7 GPs, 15 practice nurses, 37 patients	++	++
Gimlin (2007). (17)	Qualitative	Focus on the role of organisational setting and age in shaping individuals' narratives of embodied selfhood	20 participants were interviewed, all women..	++	+
Gray et al. (2013) (4)	Qualitative	To describe the development and optimization of the Football Fans in Training (FFIT) programme.	Feedback forms: 155. Focus Groups: 26 men who had completed the programme. Telephone or face-to face interviews: 13 non completers.	++	++
Greener 2010 (18)	Qualitative	To identify perceptions of health professionals, policy makers, and overweight individuals about obesity causation and interventions	34 overweight individuals, 7 practice nurses, 5 dietitians, 4 GPs, 2 health visitors, 1 clinical psychologist, 1 clinical nurse, 9 policy makers	++	+
Herriot et al. (2008) (19)	Qualitative	To enhance the understanding of why subjects volunteered to take part in a weight loss trial and also to ascertain their views on each of the diets tested.	Baseline: 32 participants, 78% female 6 months: 14 participants, 86% female.	++	++

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Hindle (2012) (9)	Qualitative and quantitative (programme review)	Review specialist weight management programmes (level 3) as part of review of obesity care pathway in Birmingham; describe and analyse current service provision; obtain views of local clinicians	Providers and patients involved in level 3 weight management services in Birmingham and Solihull. Providers include managers, dieticians, counsellors, and GPs.	-	+
Hunt et al. (2013) (20)	Qualitative	To explore men's views of a pedometer-based walking program, part of a weight-management intervention delivered through Scottish Premier League football clubs, and the congruence or challenge this poses to masculine identities	27 participants, 100% men.	++	+
Johnson (2011) (6)	Qualitative	To identify perceptions of weight management services (e.g. expected services, format, delivery method, location etc); likelihood to take part in weight management services; and what they feel the current barriers are to accessing services.	500 participants, 55% female.	+	+
Lavin (2006) (21)	Quantitative and qualitative	Feasibility of building commercial weight management referral into primary care; assessment of potential barriers to enrolment and attendance	Participants from 2 GP practices in South Derbyshire: 1 suburban, 1 inner city. 107 participants total	++	+
	Qualitative	CONFIDENTIAL		-	+
Nield 2012 (22)	Quantitative (service evaluation)	Investigate the physical, psychological and dietary impact of the 12 week Weigh Ahead weight management programme and investigate the patients' perspective of the service	289 participants who attended interim Weight Ahead assessment.	++	+
North Somerset: Anon student (2012) (23)	Qualitative	To evaluate the experience of clinicians referring to and service users who received vouchers for Slimming on referral.	Five responses, 80% female. Two attended weight watchers and three attended Slimming world. Clinician's invited but not response.	++	++
Penn (2008) (24)	Qualitative	To explore the maintenance of behaviour change with a view to informing and improving intervention design.	15 participants, 47% female	++	+
	Quantitative and qualitative	CONFIDENTIAL		+	++
	Qualitative evaluation	CONFIDENTIAL		+	++
Reed (1999) (25)	Qualitative	How were women helped by dietary advice with aquafit exercise to reduce weight and increase physical activity and what else would help?	30 participants, 100% female.	++	++

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Rowe and Basi, 2010 (12)	Qualitative	Maximize the appeal of weight management services.	The research included a diverse range of demographic groups, including men, women, young people, and individuals from different ethnic backgrounds and of different income levels.	+	-
Shropshire Community Health trust 2012 (10)	Qualitative	To evaluate the Weight wins plus scheme in Telford and Wrekin	NR	-	+
Shropshire Community Health trust 2012b (11)	Qualitative	To evaluate the Weight Wins pilot in Telford and Wrekin	37 participants	-	+
Thompson and Thomas 2000 (26)	Quantitative	To survey a group of obese people attending a dietetic clinic in Portsmouth to determine their views and opinions about treatments to lose weight.	161 participants. 71% were female.	++	++
Visram et al. (2009) (27)	Qualitative	To present qualitative evidence that can inform the development of effective and acceptable strategies for the prevention, treatment and management of overweight and obesity in primary care and community settings.	20 participants responded. 75% were female.	++	++
Withnall (2008) (28)	Qualitative	Scope the behaviours and motivational issues related to weight management with the chosen target audience to inform current and future weight management provision in Kirklees.	Groups included a 'good spread' of respondents in terms of type of weight management activity, gender and age.	++	++
	Systematic review	In press		NA	NA

Themes

The results highlighted four key themes (Table 5) relating to the initial motivation to lose weight, the benefits of attending a behavioural weight loss programme, participants' beliefs about the effectiveness of these programmes and how this could be improved and their barriers to both uptake and on-going engagement. These will now be considered.

Service users' motivation for weight loss

Service users had two clear motivations for weight loss which were improvement in appearance and health. Health tended to be of more importance for older service users and those that were male (28),(17),(18),(19),(4),(13),(12), whereas appearance was most often cited for the remaining younger and female participants (28, 29),(17),(18),(19),(5),(12).

For example, [In press] (13). In contrast, a 21 year old female stated her motivation as appearance: *'I'd like …to be able to go into a shop and pick up even a size 12 and have it fit'* (17).

Benefits of attendance

Service users described three key benefits of attending (in person) behavioural weight loss programmes. The most common benefit related to the group support they received from other

group members, the social contact and enjoyment they had at the groups and the ways in which this facilitated their weight loss through peer pressure and celebration of their weight loss successes (7),(29),(3),(8),(17),(18),(19),(20),(9),(23),(27),(4),(6),(5),(12).

Anon: *'That class motivation I felt worked… building up that… friendly atmosphere and team motivation I found worked quite well*' (3).

For the three papers on men only groups, the users described the 'blokey banter' and the ability to have male orientated conversations (7),(20),(4). [CONFIDENTIAL]

All participants who mentioned group support also described the benefits of being with similar people with a similar amount of weight to lose and those in age matched groups found this approach useful. A few papers, however, highlighted drawbacks to the group approach with some concluding that they found the group embarrassing (particularly for physical activity) with some members describing how they found it difficult to speak openly and would have preferred a more personalised approach (7),(15),(16),(8),(10),(27),(4),(5).

Anon: *'It's like always speaking about the superficial . . . you can't go into a group of forty people and discuss and say 'Well, I had an argument with my husband tonight, it's really put me off and I went into the fridge' or 'I got fired from work' or anything like that. So those things you keep under cover, but the real reason you are not under control is because you are not approaching those issues and for that reason it never worked.'* (15).

Users also described the benefits of having a routine of going to a regular meeting and how this provided them with clear deadlines and a clear structure (16),(9). Finally, many papers described the benefits of a regular 'weigh in' by a group leader or health professional which acted as a strong motivator for changing their behaviour and reaching their targets (3),(14),(19),(23),(24),(25).

Anon: *'If I'd gone to Weight Watchers and had to go every week and I got somebody monitoring me...I feel that that would have really, really encouraged me to do it'* (3).

One paper compared a group programme to regular visits to the GP and indicated that many of those seeing the GP would have preferred to be in a group but that they found the GP approach more flexible and more patient led as they could chose when to make their next visit (3).

Users' views on effectiveness of programme

Service users also described their views of which components of the behavioural weight management programme were effective and how this effectiveness could be improved. Several papers outlined the use of embedded physical activity which was perceived to improve weight loss and several users' involved in programmes without embedded physical activity expressed a desire for it to be included in the future (7),(19),(9),(11),(4),(6),(12). Expression or development of users' reasons behind requesting physical activity was not reported. Those papers exploring men only services specifically highlighted users' belief in the effectiveness of physical activity, particularly the use of pedometers (7, 20),(13):

Anon Male: *'That [pedometer] has been my Godsend. It becomes almost like, competitive with yourself. You know you're sitting at ten o'clock at night, I've only done 8,000, I'll need to go and take the dog back out. ..I'm definitely going to keep that clipped on my belt, when I stop.'* (20).

Service users also repeatedly described how the success of the programmes was strongly linked to the personality and approach of the specific group leader and highlighted the benefits of humour, being able to control the group, allowing time for discussion and sometimes sharing their own experiences of weight loss (29),(3),(14),(8),(23),(10),(5).

[CONFIDENTIAL]

Anon: *'They* [group leader] *congratulated you as much for losing half a pound than they would if you lost half a stone'* (3).

The desire for longer term follow ups was also apparent in a number of papers with users stating that they were often reluctant to manage their weight on their own and wanted continued professional support for as long as possible (7),(15),(16),(8),(18),(19),(22),(10),(11),(4),(5). In one paper users also asked for longer sessions (11). For those programmes funded by the NHS several users explained that being referred by their GP or funded by the NHS gave the weight loss programme a legitimacy and endorsement which made them feel obligated to their GP and therefore more motivated to succeed (16),(8),(27). In addition users also described components of the programmes that they believed were predictive of success. Some papers highlighted the use of clear plans for the future (7),(16),(22) and some indicated a role for individualised and tailored support by the health professionals or group leaders (7),(15),(16),(8),(10),(27),(4).

The users also believed that the effectiveness of the programmes was related to their content and the specifics of their dietary approach. In particular, diets with a simple message, which did not include banned foods, that were considered family friendly, that did not incur any extra cost and that were not perceived to be repetitive or boring were regarded as more successful (29),(8),(19),(4),(5),(12). Finally, the male only groups emphasised the effectiveness of an approach that fed into the male identity and encouraged competitiveness both with themselves and other men (7),(20),(4),(13).

Anon male: '*I thought that* [The physical representation of midpoint weight loss] *was thoroughly good because there was one person in the group, we'll no name anybody, had a bag full, and I thought, "Look at that bag", and then I looked at mine, and I went, "Hey, wait a minute here!" And that guy actually pushed me to say "Right, I'm going to go even harder now" [. . .] and the last five weeks, bang, as if everything just dropped off.'* (4).

Barriers to attendance

Some of the papers described the views of those who had not attended a structured course or who had dropped out of a programme. The final theme to emerge from the papers related to the barriers to attend the weight loss programmes and those factors which led to drop outs. In the main these barriers reflected practical issues such as home commitments and childcare (29),(18),(21),(4),(12), work (18),(4),(12), cost (29),(3),(16),(8),(21),(23),(26),(6),(5),(12) and time (29),(21),(4),(12). In addition, not losing weight was also a common reason for non-attendance (8),(21). One study reported that early weight-loss determined whether patients completed a self-funded programme (21). The second offered this quote from a lapsed patient but provided no details on how long they had adhered to the programme before leaving:

[CONFIDENTIAL].

Further, users also described the role of feeling judged and stigma (29),(15),(16),(5) and embarrassment (26),(4),(6).

Anon male: *'I was sorry I couldn't participate in the physical exercises they did, but I didn't want to get embarrassed and be out of puff and look like an idiot, grunting away there. (Interviewer: Do you think they [coaches] could have done more to accommodate you?) I didn't really, no. I mean, I don't blame them for that at all. No, no, no, I just didn't want to bring it up.'* (4).

Anon: *'I found it quite a lot of pressure some weeks …you think I must go to the gym……and I found myself thinking it's not worth it really, the way it's making me feel.*' (19).

Table 5: Summary of themes and sub themes and their occurrence in the evidence

Themes	Subthemes	References
Motivations	Appearance	(29) (17) (18) (19) (5) (12)
	Health	(7) (17) (18) (20) (4) (5) (12)
Benefits of programme	Group support / social contact / tips from others / peer pressure / celebration of success	(7) (29) (3) (8) (17) (18) (19) (20) (9) (23) (27) (4) (6) (12)
	Routine / deadlines	(16) (9)
	Weighing in front of someone	(3) (14) (19) (23) (24) (25)
Effectiveness	Endorsed by GP referral / NHS funding / feeling obligated	(16) (8) (27)
	Activity included	(7) (19) (9) (11) (4) (6) (12)
	Leader personality / humour / share own experiences	(29) (3) (14) (8) (23) (10) (5)
	Longer term follow ups work better	(7) (15) (16) (8) (18) (19) (25) (22) (10) (11) (4) (5)
	Longer sessions	(11)
	Clear plan for future / clear structure	(7) (16) (22)
	Individual meetings with leader / mentor / tailored approach	(7) (15) (16) (8) (10) (27) (4) (5) (12)
	No foods banned / easy to follow diet / family friendly	(29) (8) (19) (4) (5) (12)
	Male identity / competitiveness	(7) (20) (4)
Barriers	Work	(18) (4)
	Home commitments / childcare	(29) (18) (21) (4) (5) (12)
	Ill health / can't exercise / turn up	(18) (25) (4)
	Cost	(29) (3) (16) (8) (21) (23) (26) (6) (5) (12)
	Time	(29) (21) (4) (12)
	Judgemental HPs / stigma	(29) (15) (16) (5)
	No weight loss – drop outs	(8) (21)
	Embarrassment, going alone	(26) (4) (6)

Summary

The literature search identified 24 pieces of evidence relating to users' views of behavioural weight management programmes addressing both commercial and NHS funded services. One systematic review [in press] incorporated. The majority of views were positive and came from those who had attended such services although a minority of papers did address the issue of non-adherence and non-attendance. In general, most people were motivated to lose weight for issues of either appearance or health which prompted them to seek help. The key benefits of attending a programme were identified as being a member of a group which provided peer support, social

contact, tips from others and a source of celebration when weight was lost. Routine weighing in front of a group leader or health professional was also deemed helpful and a couple of papers highlighted the benefits of the routine and deadlines offered by group attendance. Papers also highlighted participants' views about the effectiveness of such programmes including a key role for an activity component, the personality and motivation of the group leader, the simplicity of the diet being suggested and the need for longer term follow ups. Some papers also concluded that a group approach does not work for everyone and that some participants wanted a more individualised and tailored approach to weight management. Those exploring NHS funded programmes also argued that endorsement by the GP through referral or funding may help weight loss. The papers identified provided some insight into non adherence and the range of barriers to attending a weight loss programme. These included commitments to work or home life and time, cost, fear of being judged and embarrassment. Not losing weight was also reported as a common cause of non-adherence.

Services[2]

Scope and methods

This section relates to the features of services that determine whether, where, and how they are provided, and how they interact with other elements of the public health system to facilitate or hinder use of services.

The research question is: "What barriers and facilitators affect the delivery of effective weight-management programmes for adults and how do they vary for different population groups?"

To answer this question, we conducted a focussed search for qualitative or quantitative cross-sectional or longitudinal studies (see methods section), and also considered evidence submitted to NICE in the call for evidence process. Data was grouped within themes, which were divided into structural themes (e.g. cost, location) and themes relating to perceptions (e.g. confidence in delivery, perceptions of effectiveness).

'Barriers' and 'facilitators' are by their nature subjective terms, so it should be noted that, though results are split into 'perceptions' and 'structure', in reality, all results reported are opinions or interpretations. For example, even in the case of a structural element such as communication routes, closed routes of communication between external services and primary care were *felt* to facilitate service delivery, but there is no quantitative evidence to either support or refute this opinion.

Results

The question 5 specific search yielded 703 results (see 'Search'), 656 of which were excluded at title/abstract stage. Thirty-six further references were excluded at full text screening: 12 were not relevant to the question, 11 were not studies, 10 were not conducted in the UK, three were published pre-1995, 1 was not conducted in adults, and 1 was a conference abstract which did not provide sufficient detail (see appendix 3).

Characteristics of included studies

After screening, 12 pieces of relevant evidence were identified, representing 11 studies. These are listed in table 6. Evidence tables for each included study can be found in Appendix 4. Studies were a mix of programme evaluations and qualitative investigations of the perceptions and views of practitioners. More studies reported on barriers than on facilitators, and the majority of data was qualitative in nature, though five studies contained some quantitative components (9),(30),(21),(22),(7). The majority of studies reported views of primary care clinicians and other staff members (29),(16),(31),(18),(9),(30),(21),(8). Two studies also reported on the views of health care providers outside of primary care (18),(9), one study reported views of policy makers (18)), and one study reported the views of commissioners and group leaders from a commercial weight loss programme [CONFIDENTIAL]. Seven studies also reported the views of participants; these are covered in the 'users' section.

[2] Previously question 5.

Internal validity

As seen in table 6, the majority of included studies were judged to be of high internal validity (++), or quality. [CONFIDENTIAL]. One study was judged to be of low internal validity (-) as methods reporting was particularly lacking in detail (9).

External validity

As also seen in table 6, just over half of the included studies were judged to be of high external validity (++), meaning their findings were judged to be relevant to and representative of the population of interest. Four studies were judged to be of only moderate internal validity (+): two were downgraded due to a lack of information with which to judge the representativeness of the sample (18),(9); one was downgraded as it was unclear if the selected participants were representative of the eligible population (21); and one was downgraded due to insufficient information with which to judge if the sample population was representative of the source population. Finally, one study was judged to be of low external validity (-) as it was unclear if the eligible population was representative of source population *and* was unclear if the selected participants represented the eligible population.

Table 6. Included studies – 'services'

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Campaign Company 2008 (29)	Qualitative	Experience of health professionals directly involved in working with overweight patients in primary care, secondary care, and broader community settings. Commissioned to inform development of social marketing approaches to tackle obesity.	GPs, practice nurses, and practice staff	+	-
Counterweight 2008 (16)	Qualitative	What are the key barriers and facilitators to patient and staff engagement with Counterweight delivered via primary care?	7 GPs, 15 practice nurses, 37 patients	++	++
Epstein 2005 (31)	Qualitative	explore GP's views about treating patients with obesity	21 GPs from one inner London trust	++	++
Greener 2010 (18)	Qualitative	Perceptions of health professionals, policy makers, and overweight individuals about obesity causation and interventions	34 overweight individuals, 7 practice nurses, 5 dietitians, 4 GPs, 2 health visitors, 1 clinical psychologist, 1 clinical nurse, 9 policy makers	++	+
Gray 2013 (4)	Qualitative	Describe the development and optimization of the Football Fans in Training (FFIT) programme	194 participants in the Football Fans in Training programme; six coaches involved in its delivery	++	++
Hindle 2012 (9)	Qualitative and quantitative (programme review)	Review specialist weight management programmes (level 3) as part of review of obesity care pathway in Birmingham; describe and analyse current service provision; obtain views of local clinicians	Providers and patients involved in level 3 weight management services in Birmingham and Solihull. Providers include managers, dieticians, counsellors, and GPs.	-	+
Hoppe 1997 (30)	Quantitative	Examine practice nurses' beliefs about obesity and their current practices and the role of weight management context and their own BMI on these factors	586 practice nurses	++	++

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Lavin 2006 (21)	Quantitative and qualitative	Feasibility of building commercial weight management referral into primary care; assessment of potential barriers to enrolment and attendance	participants from 2 GP practices in South Derbyshire: 1 suburban, 1 inner city. 107 participants total	++	+
Nield 2012 (22)	Quantitative (service evaluation)	Investigate the physical, psychological and dietary impact of the 12 week Weigh Ahead weight management programme and investigate the patients' perspective of the service	289 participants who attended interim Weight Ahead assessment.	++	+
	Quantitative and qualitative	CONFIDENTIAL		+	++
	Qualitative	CONFIDENTIAL		+	++

Facilitators

Six of the ten included studies reported one or more facilitators to service delivery. These are narratively described below, and also summarized in table 7.

Table 7 Facilitators, in descending order by frequency

Theme	Times coded	References
Perceptions of effectiveness (e.g. BWMPs are effective)	4	(16), (18), (30), (8)
Practice or programme infrastructure	4	(29), (21), (7), (8)
Cost (e.g. subsidized)	2	(21), (8)
Confidence in delivery/referral	2	(29), (30)
Service delivery	2	(16), (8)

Structure

Four studies reported structural components that facilitated delivery of weight management services. Two studies cited the subsidy of programmes such that they were free to the user as enablers to enrolment (21), (8). In one study, household income was not significantly associated with completion of a 12 week fully subsidized commercial programme, but when funding was removed between weeks 12 and 24, people with a lower household income were significantly less likely to continue attending the programme (21). [CONFIDENTIAL]

Two studies reported that active general practitioner (GP) involvement facilitated delivery. In one study, the authors state that successful practices were '*characterised by active GP participation and ownership*,' with staff members acting as programme '*champions*' (16). A [CONFIDENTIAL]

In three studies, routes of communication between primary care trusts/practices and external programmes were identified as facilitators. In particular, '*partnership working*' was viewed as a positive system attribute, referring to an integrated scheme between a commercial provider and the primary care trust (16). [CONFIDENTIAL]

Perceptions

Six studies identified opinions and attitudes amongst physicians and staff that facilitated the provision of weight management services. These can be grouped under three main themes, outlined below.

Confidence in delivery

There is some evidence of primary care providers, including practice nurses, expressing confidence in raising and tackling the topic of obesity with patients (29, 30). In a survey of practice nurses, results suggested that overall respondents were confident about giving weight loss advice (mean score of 5 on a scale of 1 to 7, where 1 was 'strongly disagree' and 7 was 'strongly agree) (30). In a second study, confidence in raising the issue of weight was a common finding across interviews with a range of healthcare providers (29). In particular, BMI was seen as useful tool for expressing concern with obesity and raising the subject in the first place as it was viewed as an objective measure with which to classify patients as overweight or obese (29).

Perceived effectiveness

In three studies, primary care providers reported positive perceptions of behavioural weight management services. One study mentioned prior experiences of patient success as a facilitator to further referrals to a specific programme (16); one study found that health professionals preferred programmes that encouraged lifestyle change to more clinical treatments for obesity (no further detail provided) (18); and one study found that practice nurses regarded excess weight as treatable (30). The third study was a quantitative study and no further detail was provided for *why* the respondents felt excess weight was treatable. [CONFIDENTIAL]

Barriers

All ten studies reported at least one barrier to service delivery. These are summarized in table 8 and reported narratively below.

Table 8 Barriers, in descending order by frequency

Theme	Times coded	References
Perceived ineffectiveness (e.g. BWMPs don't work)	7	(29), (16), (31), (18), (9), (30), (18), (7)
Practice/programme infrastructure	8	(29), (16), (4), (18), (9), (30), (22), (8)
Strategic context (e.g. obesity is not a priority)	5	(29), (16), (18), (9), (21)
Perceived role (e.g. it's not my job to refer/advise on BWMPs)	4	(29), (16), (31), (30)
Perceptions about participants (e.g. people are not motivated to lose weight)	3	(29), (18), (9)
Lack of confidence in delivery/referral (e.g. insufficient training)	3	(29), (16), (18)
Service delivery	3	(4), (9), (21)
Cost	1	(21)

Structure

Practice/programme infrastructure

Seven studies reported some aspect of practice or programme infrastructure to be a barrier to delivery of BWMPs. The majority of these centred on referrals. Issues included a lack of clarity around the referral system (9),(8); a lack of a formal mechanism for referring to commercial weight

management programmes (29); and an issue with GPs signing consent forms for participation in an external programme (4). Furthermore, one quantitative study reported that practice nurses who ran their own weight loss clinics were less likely to refer to external BWMPs (no further detail provided) (30). Referral is discussed in greater detail in 'Referral.'

In two studies, primary care providers reported that referral to and delivery of BWMPs was limited by lack of knowledge or training in primary care (29), (18). In one study, authors report that, in particular, primary care providers felt they needed more training in motivational techniques (29); the second study did not. Two studies touched upon issues with staff engagement: in one study, a range of health care providers felt that more internal enforcement of weight management systems within primary care was needed (29); and a second study of an intervention delivered in primary care reported that 'less successful' practices were characterized by the fact that engagement was limited because practice nurses responsible for programme implementation had not been involved in the decision to sign up to the programme (16). A final study, which has as its basis surveys and interviews with participants, cited limits in funding, staffing, and resources as barriers, but did not provide more information on what evidence was used to draw these conclusions (22).

Strategic context

Two studies reported issues with integration and communication between primary care and commercial, community, and more specialized services (9, 18); neither study provided further detail on this point or employed illustrative quotes. In a further two studies, primary care staff reported that there were insufficient incentives for primary care to engage with BWMPs (again, no further information provided) (29), (16). In one study, health care providers and policy makers perceived a lack of health service capacity and ability to '*deal effectively with weight management'* (18), and in another authors speculated that the *'natural antipathy of the NHS for working with the private sector*' was a barrier to delivery of commercial BWMPs, though do not provide the reasoning behind this conclusion (21).

Service delivery and cost

Three studies reported barriers relating to the operation of a specific weight management service. In one study, the perceived ease of getting to a meeting was associated with enrolment, and people who did not drive to sessions were less likely to complete the programme (detailed data not reported) (21). This same study found that participants who reported financial troubles were less likely to enrol in a commercial BWMP, but once enrolled, were equally as likely to complete the programme: 80% of those who reported money worries enrolled in the programme when it was offered to them, compared to 93% of the participants who reported no money worries. In the second study, primary care staff indicated that they would like increased contact between patients and providers but did not specify how much they would like this increased by (9). In the third study, coaches responsible for delivering a Football Fans in Training programme reported difficulty in finding sufficient time to read through and assimilate detailed delivery notes in preparation for each session (4). These coaches also indicated that they felt the lack of provision of post programme follow-up was a barrier to programme success in the longer term.

Perceptions

Seven studies reported perceptions of service effectiveness to be a barrier. In three cases, this had to do with perceived suitability of BWMPs to a particular group of patients. Primary care staff cited

issues unique to an Asian community in one study (29) and [CONFIDENTIAL]. One study found primary care staff wanted to introduce an assessment process to identify people who would benefit most from the service (9). No further information was provided.

Four studies reported more general issues with perceived effectiveness. In one study, a policy maker stated that, "*there isn't any extremely strong evidence base behind any of the specific interventions*" (18) and in another, primary care providers reported needing to see proof of value for money for BWMPs (9). In two studies, health care providers were sceptical about patient compliance and perceived this to be a barrier to effectiveness (18), (30).

In four studies in primary care practices, clinicians and other staff reported the view that weight management, including motivating patients, was not within their role (29), (16), (31), (30). Three studies reported issues with primary care staff's confidence in their ability to deliver or refer to BWMPs (29), (16), (18); in all, general issues about insufficient training, knowledge, or ability to motivate patients came out (see 'Training' for more detail), and one also reported an issue whereby primary care staff who felt insecure about their own weight were not confident raising the issue with patients (29). None of these studies provided detailed information or quotes. In three cases, the views that primary care clinicians and other staff held of their patients acted as a barrier: in two cases, a perceived lack of patient motivation was cited as an issue (29), (18), and in one instance physicians thought that participants needed to feel more responsible for the outcomes of their weight management efforts (9). The authors of this study do not report any suggestions from physicians as to how to increase participants' senses of responsibility, but speculate that patient contracts may be a way in which to do so. This speculation was derived from a question authors asked participants about the use of contracts including 'what patients should expect from the service and what is required of them'; the authors reported that participants responded positively to this suggestion and 'felt that having very clear expectations of what was expected of them would increase their motivation'. The authors do not provide quotes or further detail to support this assertion.

Conclusion and discussion

Findings are limited by a lack of evidence, and especially by a lack of quantitative data, for example data on degrees of practitioner involvement or comparisons of different communication pathways. They are also limited by the fact that, of those that cover specific programmes, the programmes are quite homogenous and are all group-based. As discussed above, the barriers and facilitators reported here have been interpreted as such by individuals, whether they are service providers, clinicians, commissioners, or the authors themselves. Despite the fact that the reported information is subjective, some themes appear frequently and, unsurprisingly, many of the facilitators reported relate closely to the reported barriers (e.g. perceived effectiveness versus perceived ineffectiveness). From the included studies, the below elements are perceived to impact provision and use of BWMPs, with a particular focus on programmes delivered in or referred to from primary care:

- Perceived effectiveness of programmes, e.g. do they lead to weight loss, do they work for all groups of people, do patients comply
- Perceived role of clinicians and other primary care staff in addressing obesity with their patients
- Cost of programme at point of delivery

- Engagement and involvement of GPs and other primary care staff
- Routes of communication between BWMP services and primary care practices, where the service is delivered outside of primary care
- Confidence of clinicians and other primary care staff in addressing obesity with their patients and motivating their patients to attend a BWMP
- Clarity of referral system and criteria
- Knowledge of and training about BWMPs within primary care
- Incentivising delivery of/referral to BWMPs within primary care
- Location of meetings.

Referral [3]

Scope and methods

This section relates to what primary care providers can say or do to affect the likelihood of patients taking up referral to and adhering to weight loss programmes. It also relates to the characteristics of different referral systems and how those characteristics affect take up and adherence to the programme.

The research question is: "What are the best practice principles for primary care when referring people to commercial, voluntary or community sector or self-help lifestyle weight management programmes?"

To answer this question, we conducted a focussed search for qualitative studies, quantitative cross-sectional or longitudinal studies, or randomized controlled trials (see methods section), and also considered evidence submitted to NICE in the call for evidence process.

Results

The search specific to this section yielded 113 results (see 'Search results and included studies'), 94 of which were excluded at title/abstract stage. Ten further references were excluded at full text screening: five were not relevant to the question; three were not conducted in the UK; one was published prior to 1995; and one was not a study (see appendix 3).

Characteristics of included studies

After screening, nine pieces of relevant evidence were identified, representing six studies. These are listed in table 9. Evidence tables for each included study can be found in Appendix 4. The methodologies included both qualitative approaches in the form of interviews and focus groups and quantitative surveys. Data on referral practices, uptake and adherence to weight loss programmes was identified from these papers although it was rarely their key focus. Therefore, the information with which to answer this question was very limited, and consisted mainly of one or two paragraphs on referral within much broader reports, the majority of which (six out of nine references) were unpublished. There was no evidence that any one referral scheme or system led to more enrolment, engagement, or weight loss, than any other referral scheme.

Of the six included studies, three evaluated commercial programmes which involved some element of referral from primary care (21), (7), (8). Two evaluated NHS weight management programmes (22), (10), (11), and the final study did not focus on any one programme specifically, but rather explored the experience of health professionals working with overweight patients in primary care (29).

Internal validity

As seen in table 9, two studies were judged to be of high internal validity (++) (21), (22). [CONFIDENTIAL]. The final study was judged to be of low internal validity (-) as it did not provide a clear account of sampling, data collection or the researcher's role and as the data were not rich (10), (11).

[3] Previously question 6

External validity

[CONFIDENTIAL]. Three were downgraded to moderate, in one case because it was unclear if the selected participants were representative of the eligible population (21), in one case because the characteristics of the sample were not described (10), (11), and in the third instance because of insufficient information with which to judge if the sample population was representative of the source population (22). The final study was judged to be of very limited external validity (-) as it was unclear if the eligible population was representative of the source population and was unclear if the selected participants represented the eligible population (29).

Table 9. Included studies – 'referral'

Study ID	Study type	Research aims	Participants	Internal validity	External validity
Campaign Company 2008 (29)	Qualitative report. Unpublished.	Explore experience of health professionals directly involved in working with overweight patients in primary care, secondary care, and broader community settings. Commissioned to inform development of social marketing approaches to tackle obesity.	GPs, practice nurses, practice staff, health visitors, pharmacists, dietitians, occupational therapists, physiotherapist, specialist consultants. (Note, evidence reported in this review focuses on GPs, practice nurses, and practice staff.) No other description given, n NS.	+	-
Lavin 2006 (21)	Quantitative and qualitative; published and unpublished data	Investigate feasibility of building commercial weight management referral into primary care; assessment of potential barriers to enrolment and attendance	Participants involved in Slimming World on referral. From 2 GP practices in South Derbyshire: 1 suburban, 1 inner city. 107 participants total	++	+
Nield 2012 (22)	Quantitative (service evaluation); unpublished.	Investigate the physical, psychological and dietary impact of the 12 week Weigh Ahead weight management programme and investigate the patients' perspective of the service	289 participants who attended interim Weight Ahead assessment.	++	+
	Quantitative and qualitative; published and unpublished data	CONFIDENTIAL		+	++
	Qualitative evaluation; unpublished.	CONFIDENTIAL		+	++
Shropshire 2012 (10, 11)	Quantitative and qualitative; unpublished	To evaluate the Weight wins plus scheme in Telford and Wrekin	6 participants responded	-	+

Themes

The synthesis identified five key themes: raising the issue of weight, taking in house action, the referral process, uptake of the initial appointment, and completion of the initial funded programme. These are described narratively below and summarized in table 10.

Table 10 Summary of relevant themes from included studies

Themes	subthemes	papers
Raising the issue	Easy	(29), (10, 11)

	Using health checks (BP, BMI, diabetes)	(29), (8)
	Barriers (language, stigma)	(29)
	Who raises? (Practice nurses raise with all, GPs with some)	(29), (10, 11)
	Raises issue of weight with men as men are often not aware of weight problem	(7)
Taking in house action	Motivation – health, symptoms	(29)
	HP skills: Practice nurses s, GPs need more information, feel ill equipped	(29)
	Want clear care pathway	(29)
Referral process	GP – PALS, GP-NHS funded group	(29),(10, 11) (22), (21), (8), (7)
	Self-referral	(29), (22), (8)
	GP hub monitors progress	(8)
Uptake of appointment	GP adds obligation to time and funding / GP as obesity champion	(8)
Completion of initial programme (free)	Accountability to GP is a facilitator	(8), (7)

Raising the issue of weight

Four of the papers described the process of initially raising the issue of weight in the primary care consultation. This process mostly took place with the context of on-going health checks for conditions such as raised blood pressure or diabetes or involved engaging the patients in calculating their own BMI (29),(8). This was described as 'easy' (29),(10, 11), although in one study the language used to discuss obesity varied amongst practitioners, and some practitioners reported barriers around communicating with those patients whose first language was not English (29). Practice nurses reported raising the issue with all patients whereas as GPs only raised it when weight was deemed to have a direct impact on their health condition; no explanation was provided for this difference (29),(10, 11). [CONFIDENTIAL.]

Taking in house action

Prior to referral one paper described managing weight in house. This highlighted how health problems and symptoms were the key motivator for the patient but that members of the primary care team felt ill equipped to deal with obesity and wanted more information and a clearer care pathway (29). The paper did not provide further information on why they felt ill equipped or what further information was required, but did cite issues with motivating patients at initial consult (see 'Training' section).

The referral process

Six papers described the referral process and included referrals from the GP to the NHS Patient Advise and Liaison Service (PALS), NHS managed weight loss programmes such as 'weigh ahead' and 'why weight?' and commercial services that were working alongside the practice (29),(10, 11),(22), (21), (7),(8). Some also described how patients self-referred (29),(22),(8) and [CONFIDENTIAL].

There was no information on which to judge the impact of referral programmes on subsequent take up and adherence to BWMPs. The characteristics of the referral systems described in studies focussing on a particular programme are reported in table 11. [4]

Table 11 Details provided on referral systems

Study	Characteristics of referral system	Data on uptake and adherence (where reported)
Lavin 2006 (21)	Obese patients from 2 general practices referred to local commercial BWMP by GPs and practice nurses using voucher system. Patients assessed for referral when attending practice for other reasons, met with study nurse who gave details of study, then given vouchers for attendance. Referral criteria: BMI ≥ 30, age ≥ 18 years, not pregnant, no recent commercial weight management group membership, 'willingness to attempt weight loss'	107 patients initially recruited, 85% enrolled in commercial group, 58% of those initially recruited completed free 12 week period.
Nield 2012 (22)	Referral pathway not described. Primarily referred via GP (78%), referral from a health care professional required. Referral criteria: BMI ≥ 40kg/m² for Caucasians, ≥35 kg/m² for patients of South Asian origin or people with comorbidity such as diabetes, hypertension, sleep apnoea, osteoporosis, or depression; aged 15 or older; 'motivated to make changes to their diet and lifestyle'; not pregnant; tried and failed 'Tier 1' services (e.g. commercial weight management programmes, gym memberships, walking groups, weight management advice from practice nurse)	75% of initial assessments attended. 49% completed final assessment.
	CONFIDENTIAL	
	CONFIDENTIAL	
(10, 11)	Referral to NHS-led BWMP, referral by health professional. In 2010, 95% of referrals via GP. In 2011, Brief Intervention Training in Raising the Issue of Weight with Clients delivered, increase in referrals from other sources (health visitors, dietitians, physiotherapists, and practice nurses) – GP referrals reduced to 80% overall. Additionally, overall referral rates in 2011 were down from 2010 by approximately 19%. Hub also available for patients to phone in and request referral. Referral form sent to commercial provider by referrer (health care professional or hub), but client to telephone to make first appointment – reminder letter sent to those who don't make contact after 2 weeks. Referral criteria: BMI > 40, no other information reported but implied adults-only.	Using total practice size as denominator, average referrals in 2011 were 0.84% of patients (authors state this is very low considering prevalence of obesity within this population). 1436 referrals in 2010, 732 (51%) were converted into a first appointment. In 2011 these were 1167 and 711 (61%) respectively. Adherence NR. Total practice size in 2010 NR.

Uptake of the initial appointment

Four papers described predictors of uptake of the initial appointment after the patient had been referred by the GP. Only one of these related to referral: CONFIDENTIAL

Completion of the initial funded programme

All papers contained some details concerning the factors associated with adherence and completion of the initial funded programmes. In only two studies were any of these associated with the referral process: in both, participants who completed the programmes indicated that [CONFIDENTIAL].

[4] Campaign Company 2008 did not report on any specific programme and therefore is not included in this table

Summary

In summary, six studies were identified which provide some insights into the referral process and the factors that relate to uptake and adherence to weight loss programmes. Most referrals were made by the primary care team, particularly the GP and were often a consequence of a health check which had facilitated the process of raising the issue of the patient's weight. The studies provide no clear guidance as the most effective referral process for improving uptake or adherence but suggest that the primary care team may add a sense of accountability.

Commissioning[5]

Introduction

Most weight loss services are externally commissioned and a relatively recent addition to NHS provision. At the time of writing, behavioural weight management programmes that are within the scope of this guidance are commissioned by local authorities. More complex services, for more complex and severe obesity, are commissioned by various bodies in the NHS.

In this report we consider the guidance available to commissioners to commission more effective and cost-effective services. We do so first by a search for material on commissioning. Second, we examine the only guidance that sets performance standards. We test these standards against the evidence of effectiveness we found in Review 1a and 1b. This is important because Reviews 1a and 1b consider only randomised controlled trials (RCT). Commissioners are unlikely to commission RCTs themselves and therefore have to judge effectiveness without the benefit of a control group with which to compare the results of a weight loss intervention. Thus it would be possible that weight loss achieved by the participants on a programme could have been achieved by those participants without the programme and commissioners cannot know this for sure. We therefore examine whether the performance standards appear to reliably distinguish effective interventions from ineffective ones.

The initial research question was: *What are the best practice principles for commissioning weight loss services and how should commissioners monitor and evaluate them?*

Methods

We searched the Trip database (http://www.tripdatabase.com/) the National Obesity Observatory (NOO) website (http://www.noo.org.uk/) and the Obesity Learning Centre's website (http://www.obesitylearningcentre.org.uk/). We searched for documents relevant to commissioning.

Results

Results of search

We downloaded the full text of 11 documents and included four documents that gave advice on commissioning. These were

1. The Department of Health's best practice guidance: Developing a specification for lifestyle weight management services
2. The Royal College of Physicians report: Action on obesity: Comprehensive care for all
3. The National Obesity Observatory's: Treating adult obesity through lifestyle change interventions. A briefing paper for commissioners
4. The National Obesity Observatory's: Standard Evaluation Framework for weight management interventions

We excluded the following studies

[5] Previously questions 7 and 9

Document	Reason
Briefing note for commissioners and local leads for weight management services NHS West Midlands.	Description of the content of other documents on commissioning. No new guidance.
World Class Commissioning: Competencies. www.dh.gov.uk A vision for World Class Commissioning: Adding life to years and years to life www.primarycarecontracting.nhs.uk To provide an understanding of how World Class Commissioning can help local areas reach their goal of reducing the prevalence of obesity	Provides a checklist of competencies and processes rather than any information about the kind of weight loss programmes that might be delivered and how they might be evaluated.
A snapshot of (non-surgical) NHS weight management and obesity treatment services in the East of England audited against the Standard Evaluation Framework	Description of current services in use against the NOO SEF and not guidance on commissioning.
Healthy weight 4 Kirklees weight management service	A description of the service rather than guidance on commissioning
Obesity: working with local communities NICE	Scope covers prevention of obesity rather than weight loss services
Making the case for adult weight management services Department of Health	Not available anymore

Description of the commissioning guidance

1. The Department of Health's best practice guidance: Developing a specification for lifestyle weight management services(32)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142723/Weight_Management_Service_Spec_FINAL_with_IRB.pdf

The guidance was produced in 2013. The authorship is described as the Department of Health, Obesity and Food Policy Branch. It was informed by a rapid review of the literature published 2000-2013 of weight loss service outcomes, discussions with service providers and an expert panel discussion, though the members of this panel are not listed. Some of the review team and members of the PDG were involved in developing the guidance and redrafting. The first 24 pages outline general discussion and guidance on the way that a specification document for a service may be produced and its content. Appendix 2 offers a specimen service specification and provides a comprehensive description of the standards that might be expected. The key elements that are proposed for the specification document are

- Description of the problem of obesity
- Prevalence of obesity
- Overview of the obesity care pathway
- Aims and objectives of the service
- Inclusion/exclusion criteria and thresholds for suitability
- Referral route
- Applicable service standards (including CQC compliance, health and safety, safeguarding, service model and staffing policies, data protection, ability to make demand)

- Service delivery
- Finance
- Service monitoring and evaluation

The document proposes the following monitoring and evaluation criteria

Objective	Outcome	Method of Measurements
a) To implement an accessible tier 2 lifestyle adult weight management service for the overweight and obese adults aged 16 and over within the locality, which forms an integral part of the weight management care pathway.	i. 100% of patients accessing the service meet the eligibility criteria. ii. A minimum of 60% of all engaged participants complete the intervention. Engaged participants are those who have attended at least 2 sessions of the intervention10. Completion is measured as participants attending at least one of the last three sessions of the intervention. iii. The service is free at the point of contact and resources shared with users are provided free of charge.	i. Number of participants. ii. Engagement and completion rates. iii. Project initiation.
	iv. The service is safe, appropriate and complies with legislative requirements. v. 100% of staff are appropriately trained and competent in delivery of the proposed services. vi. Services are available locality wide and during the day, evening and weekends. vii. Key stakeholders are engaged in the ongoing development and governance of the programme.	iv. External audit of procedures, protocols and adherence to legal requirements. v. External audit of staff qualifications and competencies. vi. Service programming. vii. Evidence that governance arrangements are in place and being utilised.
b) To target access to the service in line with local Joint Strategic Needs Assessment as stated within the local weight management strategy: (i) individuals living in areas of deprivation (insert specific definition here)	i. xx% of individuals achieving outcomes are from deprived areas, as defined within the contract. ii. xx% of individuals achieving	i. Proportion of participants from specific LSOA post code. ii. Proportion of participants

	outcome are from the identified priority high risk groups.	from the priority high risk groups.
c) To monitor and evaluate the delivery of the service to the stated objectives.	i. 100% of participants demographic details are recorded in line with SEF criteria and weight status is measured and recorded as a minimum at the beginning and the end of the intervention ii. XX% of key stakeholders e.g. primary care professionals are aware of the service and rate it as good or excellent. iii. XX% of participants rate the service as good or excellent. iv. To report the service outcomes using the NOO SEF.	i. Participant demographics and weight status ii. Insert iii. Insert iv. Insert
d) To provide a multi-component lifestyle weight management service that supports overweight and obese adults to lose weight and learn how to maintain a healthier weight. .	i) Participants who have attended at least 1 session of the intervention achieve a mean weight loss of at least 3% of their initial weight, at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention). ii) At least 30% of all participants have achieved a weight loss equal to or greater than 5% of their initial weight at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention)	i) BOCF mean weight change analysis of all participants attending at least 1 session. ii) BOCF % weight change analysis of all participants attending at least 1 session

2. The Royal College of Physicians report: Action on obesity: Comprehensive care for all(33) http://www.rcplondon.ac.uk/sites/default/files/action-on-obesity.pdf

The Royal College of Physicians report was published in 2013 and led by a chair, John Wass, and vice-chair, Nick Finer and heard expert testimony from three groups of experts focused on different aspects of obesity. It is particularly focused on the role of physicians in obesity management but

contains a short chapter on commissioning in which they describe the role that physicians might play to support commissioning. They make the following recommendations:

Recommendations

1 Specialist physicians should take a central role in commissioning obesity services.

2 Commissioners should ensure that every NHS trust has a medical obesity spokesman or'champion', who, amongst other things, can communicate with commissioners, providers and the community and contribute to the local development of effective care pathways.

3 The RCP should support these 'obesity champions' with career development and networking opportunities.

4 Commissioning of multidisciplinary services should use the term 'severe and complex obesity' not morbid obesity or bariatric surgery because management of these patients requires MDT input and medical supervision pre-, peri- and post-operatively.

3. The National Obesity Observatory's: Treating adult obesity through lifestyle change interventions. A briefing paper for commissioners(34)

http://www.noo.org.uk/uploads/doc/vid_5189_Adult_weight_management_Final_220210.pdf

The briefing paper was produced by NOO in 2010. The process of production is not described, but it was written by Nick Cavell and Louisa Ells and peer reviewed by three commissioners. It is a short summary of evidence of effectiveness and the principles, mostly derived from the NICE guidance on the prevention and management of obesity and on Cochrane reviews. The NICE best practice principles for the kind of weight management services are described, for example. In addition to the guidance from NICE, the NOO document offers the following 'new' recommendations.

Additional NOO recommendations:

All programmes should be thoroughly evaluated. Good quality evaluations will strengthen the evidence base and support effective commissioning in the future. The Department of Health recommends that interventions are evaluated using the NOO Standard Evaluation Framework for weight management interventions.15 Validated measurement methods should be used wherever possible.

Programmes should be aligned with government messages such as '5 A DAY', the CMO's recommendation for physical activity, and social marketing campaigns such as Change4Life.

Programmes should aim to be enjoyable, engaging and easy for the target audience to access.

Given the limited robust effectiveness data currently available, it may be beneficial (where financially viable), to examine innovative approaches and programmes, as long as these are based on a clear theoretical framework, and are well evaluated.

There is good evidence for the effectiveness of brief interventions in primary care in promoting physical activity, and these may be useful components of any coordinated obesity prevention intervention.

Evidence from the NICE guidance on behaviour change is also relevant for lifestyle interventions to prevent obesity. The guidance suggests that effectiveness is enhanced when people: understand the likely impact of their behaviour on their health

- feel positive/optimistic about changing their behaviour
- make a personal commitment to change
- set goals to undertake specific actions over a specified time
- plan changes in terms of easy steps
- plan for events or situations that might get in the way of change
- share their behaviour change goals with others

4. The National Obesity Observatory's: Standard Evaluation Framework for weight management interventions(35)

http://www.noo.org.uk/uploads/doc/vid_3534_NOOSEFreportJuly09.pdf

The NOO SEF was produced in 2009 and written by Kath Roberts, Nick Cavill, and Harry Rutter. Many experts are listed as contributors and it was peer reviewed by two outside experts. The SEF is a list of data collection criteria and supporting guidance for collecting high quality information that supports the evaluation of weight management interventions across England. Sections 3 and 4 of the SEF are aimed at primary care commissioners to help the commission high quality weight management interventions. Section 3 consists of a table and Section 4 is an explanation of what each term means with, sometimes, a little explanation as to why it would be useful to collect such data. The SEF can be found in Appendix 7.

Synthesis of documents

There are two key documents that give advice on the performance standards that weight management services might be expected to achieve and the data that they might be expected to collect. These are the DH guidance and the NOO SEF. There are some points of disagreement between them that we highlight here.

The DH guidance calls attention to whether the provider might need to give data on weight loss outcomes split by demographic group, whereas the NOO SEF does not.

The NOO SEF recommended weight loss outcomes at 12 months as essential, whereas the DH guidance reflects more caution. It argues that follow-up of former participants of weight loss services at 12 months is difficult to achieve in practice and resource intensive. Furthermore, weight regain occurs and that there is no evidence that the characteristics of services affect the rate of regain. If that is the case, resources might be better spent on treating more people than trying to achieve robust follow-up at 12 months. It provides no clear direction either way, but calls attention to this issue.

The NOO Standard Evaluation Framework recommends the measurement of diet and physical activity as core components of an evaluation of a weight management intervention, alongside body weight. However, the DH guidance recognises that measurement of physical activity and diet is complicated. It is particularly challenging for weight management services to collect data using valid objective measures, which can also add considerable time and cost to commissioned services, and increases the burden on participants. The guidance recommends that commissioner's focus on demonstrating change in the primary indicator of body weight, as successful weight loss strongly implies positive changes in diet and/or physical activity. Collecting and reporting data on diet and physical activity will considerably enhance the evaluation, and help to demonstrate the effectiveness of individual components of the programme, but the DH guidance does not view this as essential.

Testing the standards of achievement for behavioural weight loss programmes against the evidence

There are three standards in the DH commissioning guidance which are markers of an effective service. These are

- A minimum of 60% of all engaged participants complete the intervention. Engaged participants are those who have attended at least 2 sessions of the intervention. Completion is measured as participants attending at least one of the last three sessions of the intervention
- Participants who have attended at least 1 session of the intervention achieve a mean weight loss of at least 3% of their initial weight, at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention)
- At least 30% of all participants have achieved a weight loss equal to or greater than 5% of their initial weight at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention)

We sought to test these performance standards against the data collected in RCTs included in Review 1, which examined the effectiveness of interventions. Specifically, we examined whether any interventions that seemed ineffective when judged against the control group met these criteria and whether any services that met these criteria were in fact ineffective. In normal commissioning practice commissioners will not have control groups so are judging effectiveness based on these criteria alone.

We classified interventions as effective, ineffective, or uncertain effectiveness based on the difference in weight loss between intervention and control groups at 12-18 months and the 95% confidence intervals (CI) of that statistic. Specifically, effective interventions were ones where the difference was more than 2kg and the 95%CI excluded the 2kg boundary. Ineffective interventions were so classified if mean difference in weight loss was less than 2kg and the 95%CI did not include 2kg. All other interventions, namely those where the difference in weight loss 95%CI encompassed 2kg, were classed as of uncertain effectiveness and excluded from this analysis.

For this analysis, we assumed that weight change was normally distributed so where, as was often the case, 5% weight loss percentage was not reported explicitly, we calculated this from the mean and SD. No studies reported attendance in the format suggested by the DH guidelines. However,

where attendance overall was clearly greater than the standard then it must be true that the standard as defined in the DH guidance must have been met.

As can be seen in Table 12, there was only one case where the attendance standard was met for one ineffective intervention. However, this was for the supervised gym sessions only, which may have had other benefits to participants regardless of any effect on weight loss. Most ineffective interventions did not report on attendance in sufficient detail to know whether or not the particular DH standard was met. Where effective interventions reported on attendance, all met this standard. All effective interventions met the weight loss targets, while none of the ineffective interventions did so.

Table 12 Effective and ineffective interventions and whether or not that they meet the DH performance standards

Study	60% completion	3% mean weight loss	>30% achieve >5% loss	Notes
Ineffective				
Eriksson 2009 (36)	Y	N	NR	Attendance at exercise, no data on attendance at diet
Hersey 2 (37)	N/A	N	NR	Internet delivery
Hersey 3 (37)	N/A	N	NR	Internet/phone delivery
Nanchahal (38)	NR	N	N	<30% lost >5% at programme end but >5% at 12 months
Vermunt (39)	NR	N	NR	
Dale intensive (40)	NR	N	NR	
Dale modest (40)	NR	N	NR	
Patrick (41)	NR	N	NR	
Effective				
Kuller (42)	NR	Y	Y	
Silva (43)	Y	Y	NR	
Villareal (44)	Y	Y	Y	
Bertz (45)	N/A	Y	Y	Only two scheduled contacts
Rock CB (46)	NR	Y	Y	
Rock TB (46)	NR	Y	Y	
Vissers fitness (47)	NR	Y	Y	
Vissers vibration (47)	NR	Y	Y	
Appel CCD (48)	Y	Y	Y	
Appel IPD (48)	Y	Y	Y	
DPP (49)	NR	Y	Y	
Lindstrom (50)	NR	Y	Y	
Rejeski (51)	Y	Y	Y	
Stevens 1993 (52)	N	Y	Y	Attendance at 6 months was 56% but attendance at first 3 month intensive phase not reported

Key Y=yes, N=no, N/A=not applicable, NR=not reported

Discussion

Most guidance on commissioning is based on the 2006 NICE guideline for the management of obesity, which rests upon the best practice principles and a review of the evidence described in CG43. The potential problem with this approach is that, as we showed in Review 1a, some services which appear to meet these criteria are effective and some are clearly ineffective. Although it is helpful to meet the criteria and best practice principles, meeting them in itself is insufficient to guarantee that the service is effective.

The DH guidance is qualitatively different because it is the only guidance to set performance standards. This could allow commissioners to distinguish services that are proving to be ineffective in practice without the use of a control group from a randomised controlled trial. It is important that the DH guidance makes explicitly clear how the performance standards are measured. In particular, it sets the measurement standard using the BOCF approach, meaning that the outcomes of all attendees are included in the calculation of mean weight gain and the denominator for the calculation of the percentage achieving 5% weight loss. This is important because it would be easy for apparently ineffective services to show apparent effectiveness if the measurement method is not specified. We know from Review 1 that people who are not losing weight stop attending weight loss services and that some people trying to lose weight without any support or with ineffective support achieve considerable weight loss. These two factors together could mean that ineffective services appear to be effective if the denominator of all attendees is not specified.

The DH guidance on performance standards gave good separation of ineffective from effective interventions, but we need to consider several caveats. We arbitrarily defined services as effective if services produced a more than 2kg difference in weight loss between intervention and control at one year follow-up and where the 95%CI excluded 2kg too. In practice, because many trials were relatively small, the mean weight difference over control in effective services was rather larger than 2kg in order for the lower 95%CI to be greater than 2kg. Thus some services, which are probably effective, were classified as of uncertain effectiveness and the programmes designated as effective were above average effective programmes. However, this provides at least preliminary evidence of effectiveness. The DH guidance standard on completion measures completion in a very specific way and no studies did so. Most of the effective studies recorded very high rates of attendance that must have implied that the standard as defined by DH was met in those programmes. However, in the ineffective programmes, attendance was lower, but it is still possible that the attendance standard as defined by DH guidance could have been met. That is why most of these programmes have ‘not reported’ against this standard. At a more basic level, however, the data show that effective programmes seem to generate good attendance and ineffective ones less good attendance, but there is no direct evidence from this review that the DH standard on attendance is set at the right level.

Training[6]

Scope and methods

This section relates to the skills required by people delivering BWMPs and people referring to or assessing people for inclusion in BWMPs. The question at the outset was, "What training is needed for professionals involved directly or indirectly with lifestyle weight management programmes for adults?"

We did not do a specific search for studies on training for people involved in delivering BWMPs. Instead, we considered the required skills, competencies or qualities of people delivering programmes as were suggested in earlier sections in Review 2 on users, services and referral. We also used information from Reviews 1a and 1b to examine the training of people delivering the interventions in the studies as well as the techniques and components involved in successful programmes. By implication, if people who deliver successful programmes use particular strategies then it seems likely that it is those strategies that lead to the success and others delivering similar programmes need to know about and be skilled in their delivery.

Skills, competencies and qualities as suggested by sections of review 2

We examined other sections of review 2 ('Users,' 'Services,' and 'Referral') for information that may be relevant to training. This is summarized below, but it should be noted that the assumptions being made (e.g. that training would help alleviate certain barriers or encourage certain facilitators) are entirely speculative in nature.

Users

BWMP participants described the benefits of a regular weigh in by a group leader or health professional which acted as a strong motivator for changing their behaviour and reaching their targets (See 'Users'), implying that people should be trained in making the weigh-in an effective experience. Service users also repeatedly described how the success of the programmes was strongly linked to the personality and approach of the specific group leader. Some of these elements may be influenced by training, such as being able to control the group, allowing time for discussion and sharing their own experiences of weight loss (See 'Users').

Services and referral

In this section, perceptions of effectiveness emerged as an important element of the success of provision and delivery of BWMPs. Seven studies reported perceptions of service ineffectiveness to be a barrier; however, there was no numerical data provided to support this assumption. Training people directly and indirectly involved with BWMPs about their effectiveness could arguably alleviate this barrier (29), and the second study provided no detail on what type of training was believed to be required. Finally, in four studies in primary care practices, clinicians and other staff reported the view that weight management, including motivating patients, was not within their role (29),(16),(31),(30). This could conceivably be improved through training. That said, programmes delivered by primary care staff appeared to have lower efficacy in Review 1a than those delivered outside of primary care, and it may be that the role of primary care teams is to refer to effective programmes rather than provide them directly.

[6] Previously question 8

There was also evidence from four studies that a lack of understanding of the referral process into BWMPs was a barrier to service provision (4, 8, 9, 29). Training which aims to improve practitioners' understanding of the referral processes may therefore have an impact on service delivery and provision. In addition, anecdotal evidence gathered whilst answering questions relating to referral (see 'Referral') that patients whose first language was not English provided a particular challenge to primary care staff raising the issue of weight in the first place (29).

Training of people delivering interventions in Review 1

For each study in Review 1, we extracted data on the person or people delivering the intervention and on the training they received. Information was sparse and for the most part not well reported; it is summarized in table 13 below. No studies compared the effectiveness of programmes delivered by people with different training experiences. No studies reported on training of people indirectly involved with BWMPs.

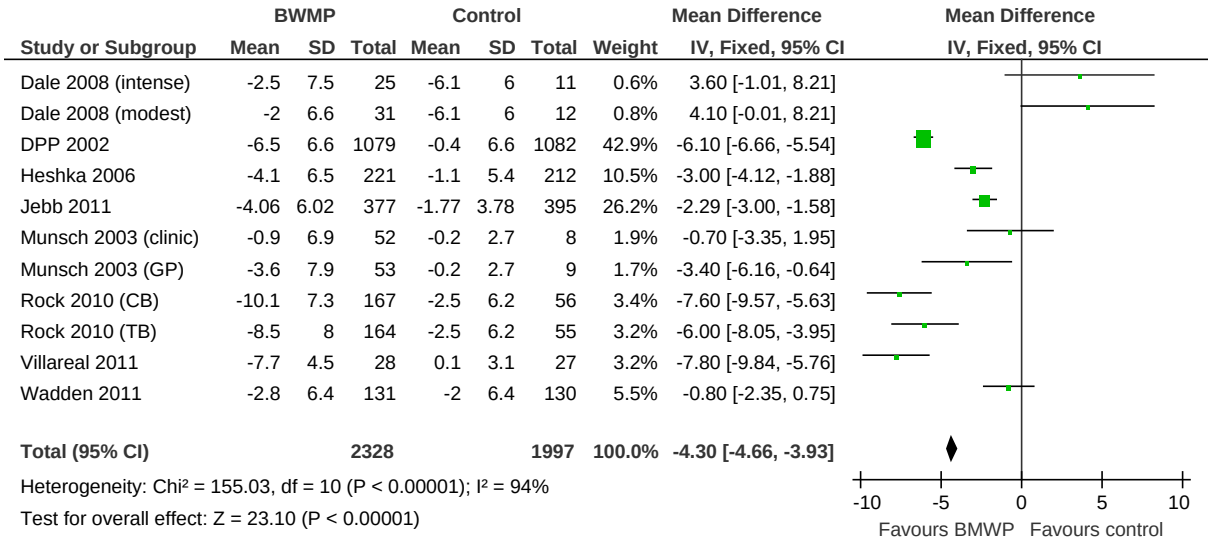
Professional background of therapist

The majority of interventions were delivered by multiple therapists with different backgrounds and qualifications. In at least 13 cases, the people who delivered the dietary components differed from those delivering the exercise components. Of those interventions delivered by only one type of therapist, one was delivered by a dietitian only (53), eight were delivered by a health professional without specific weight loss training, six were delivered by psychologists, and ten were delivered by trained lay people. In seven, the background of the therapist was not reported. In total, 36 interventions involved dietitians, 19 involved physical therapists or exercise specialists, 24 involved psychologists, 17 involved other health professionals, and 15 involved lay people.

In a multivariate regression analysis conducted in Review 1b, we found that interventions which involved some dietitian contact were associated with greater weight loss than those that did not involve any contact with a dietitian (coefficient -1.5 kg, 95% CI -2.9 to -0.2, p = 0.027). This included any programmes where at least some contact was provided from a dietitian, and includes programmes in which a dietitian was not the primary therapist.

In Review 1a we also conducted a meta-analysis on a subgroup of studies in which a BWMP was compared to a control group that received multiple weight management sessions delivered by someone with no training in weight management. As shown in Figure 2, in this subgroup, participants in the intervention group lost significantly more weight than the control at 12 to 18 months (mean difference -4.30 kg, 95% CI -4.66 to -3.93), though statistical heterogeneity was very high (I^2 = 94%). This suggests that training is valuable, but we cannot draw further conclusions from this comparison about the types of training that contribute to this difference.

Figure 2 Weight change at 12 months, BWMP versus multiple contacts for weight management with person untrained in weight management



Training received

As seen in Table 13, only 25 of the 43 included studies reported on the training given to the person delivering the programme, and the majority of these descriptions were sparse. Eight studies reported delivering training in behavioural therapy, two specifying motivational interviewing (54), (39), one specifying stage of change theory (55), and the remainder not specifying particular approaches (48),(56),(38),(57),(58). A further three specified training in behavioural modification but did not provide further details (59),(60),(53). Rarely did papers report the length of training provided: in those that did, training ranged from one two-hour session (59)– clinical psychology grad students were given two-hour training in behavioural weight control techniques) and four days, plus additional training courses (one of the commercial BWMP arms in (1)). Of those 13 interventions for which training length was reported, the shorter training sessions tended to be provided to people with a clinical or psychology background (e.g. dietitians, psychologists, GPs) and the longer training sessions tended to be delivered to lay people in the context of commercial programmes. None of the studies included in Review 1 highlighted specific gaps in or issues with training.

Table 13 Training of people delivering interventions in review 1, as per study reports[7]

Study ID and country	Main delivery person	Training
Appel 2011 (48) *Country:* USA	Weight loss coaches, HealthWays call centre	Coaches were trained before enrolment of the first participant and on a quarterly basis thereafter. The topics covered included behavioural theory and strategies, basic nutritional and exercise guidelines, motivational interviewing techniques, and study procedures, including use of the intervention Web site.
Bertz 2012 *(45)* *Country:* Sweden	Dietitians and physical therapists	NR
Dale 2008 (40) *Country:* New Zealand	Dietitians, exercise consultants and researchers	NR
Dubbert 1984 (59) *Country:* USA	4 advanced clinical pyschology grad students	Two had clinical experience and two inexperienced. Had 2hr of training in behavioural weight-control techniques. Supervision through the program by regular meetings with a clinical psychology faculty supervisor.

[7] One study did not provide any information on who delivered the intervention or on the training they received, and hence is not included in this table (Jakicic 2012)

Study ID and country	Main delivery person	Training
Eriksson 2009 (36) *Country:* Sweden	Physiotherapist and dietitians	NR
Fitzgibbon 2010 (61) *Country:* USA	Trained interventionists and lay people	NR
Foster-Schubert 2012 (60) *Country:* USA	Dietitians and exercise physiologist	Dietitian with training in behaviour modification
Gold 2007 (62) *Country:* USA	"trained therapist"	NR
Hersey 2012 (37) *Country:* USA	Health lifestyle coaches with at least an undergraduate degree	2 weeks training with psychologist
Heshka 2006 (63) *Country:* USA	Successful members	4 sessions of observation and assistance followed by 3 day residential workshop and 4 further supervised meetings.
Jebb 2011 (2) *Country:* UK, Germany and Australia	Successful members	4 sessions of observation and assistance followed by 3 day residential workshop and 4 further supervised meetings.
Jeffery and Wing 1995 (64) *Country:* USA	Trained interventionists	Advanced degrees in nutrition or behavioural sciences
Jeffery 1998 (65) *Country:* USA	"Trained interventionists" Arms with personal training also involved personal trainer who was student or staff assistant.	Advanced degrees in nutrition or behavioural sciences
Kumanyika 2012 (66) *Country:* USA	GP and health trainer	3 hour training of GP and 3 hour of lifestyle coach. Sample scripts given.
Kuller 2012 (42) *Country:* USA	Nutritionists, psychologists, exercise physiologists	NR
Jolly 2011 (1) *Country:* UK	WW: Successful members SW: Successful members RC: Trained lay people SD: Trained lay people GP/PH: GP or pharmacist	**WW:** 4 sessions of observation and assistance followed by 3 day residential workshop and 4 further supervised meetings. **SW:** 4 day foundation training course; 4 advanced training courses. **RC:** OCR Exercise to music training. Certificate in applied nutrition and weight management. Business management and marketing. Attendance at annual training conferences and convention. **SD:** NVQ level 3, 12 x 2.5 hour training sessions from dietitians and nutritionists. **GP/PH:** 2 day adult weight management
Lindstrom 2003 (50) *Country:* Finland	Dietitian, nutritionist, physician	NR
Logue 2005 (55) *Country:* USA	Dietitian Weight Loss advisor Primary care physician	Dietitians: additional training on exercise physiology Weight loss advisor: Trained to apply the processes of change that corresponded to the patient's SOC profile
Mensink 2003 (67) *Country:* Netherlands	Dietitian and exercise trainers	NR
Micco 2007 (56) *Country:* USA	Registered dietitian and masters level graduate student	"trained in behavior therapy principles and the VTrim curriculum"
Morgan 2011 (68) *Country:* Australia	Researcher	NR
Munsch 2003 (69) *Country:* Switzerland	GP or Clinic tutor (no background provided)	Trained by psychologist and dietitian in structured training lasting 2x4hrs and supervised sessions every month by a psychologist.
Nanchahal 2012 (38) *Country:* UK	Trained lay people	Trained by NHS in behaviour counselling and then received training over 2 days and further meetings with the research team.
Patrick 2011 (41) *Country:* USA	Dietitian, exercise trainer and physiologist	NR
Penn 2009 (54) *Country:* UK	Dietitian and physiotherapist	Trained in motivational interviewing.

Study ID and country	Main delivery person	Training
Rejeski 2011 (51) *Country:* USA	Professional interventionists and Cooperative Extension Agents	**Interventionist:** Degree in health sciences, trained by study investigators. **Cooperative Extension Agents**: Family and Consumer Science educators, field faculty from university, degrees in Home Economics and/or Nutrition Education
Rock 2010 (46) *Country:* USA	Trained lay people	Corporate trained (JC): Comprehensive training course and are certified by a Jenny Craig Trainer. Receive monthly continuing education training on nutrition, physical activity and motivation.
Ross 2012 (57) *Country:* Canada	Health educators	Degree in kinesiology, behavioural counselling training from clinical psychologist
Saito 2011 (70) *Country:* Japan	Nurses, dieticians, physical therapists, and physicians	NR
Seligman 2011 (71) *Country:* Brazil	Physicians and trained medical students	NR
Silva 2010 (43) *Country:* Portugal	Dietitians, nutritionists, exercise physiologists and psychologists	PhD or MS level
Skender 1996 (53) *Country:* USA	Registered dieticians	"trained in behavioural modification"
Stevens 1993 (52) *Country:* USA	Dietitian, exercise physiologist, psychologist	NR
Stevens 2001 (58) *Country:* USA	Registered dietitians, while a few were psychologists or master's level counselors with experience in weight loss or exercise programs or both.	Objectives for centralized training meetings included fostering a sense of ownership of the intervention program among the staff; educating and motivating all staff in relation to the study rationale and design; increasing competencies for individual counselling, group process, and cross-cultural counselling; and sharing ideas for creative ways to implement the protocol.
Tate 2003 (72) *Country:* USA	Web only: NR Cousellors	'Counsellors had master's or doctoral degrees in health education, nutrition, or psychology'
Vermunt 2011 (39) *Country:* Netherlands	Nurse practitioner, dietitian and GP	GPs had 2 hour training, though content or what they had to deliver not described Nurse practitioners had 5 evening courses on motivational interviewing
Villareal 2011 (44) *Country:* USA	Dietitian and physical therapist	NR
Vissers 2010 (47) *Country:* Belgium	Dietitian and physiotherapist	NR
Wadden 1988 (73) *Country:* USA	Doctoral level clinical psychologists	Detailed treatment manual, doctorate
Wadden 2011 (74) *Country:* USA	Practice nurses (selected for good rapport with patients)	Received 6-8 hr training before intervention began. Certified in intervention delivery at baseline and were recertified at 6-month intervals
Weinstock 1998 (75) *Country:* USA	Clinical Psychologist	NR

Components of successful interventions as identified in Review 1

In Review 1, we used direct and indirect comparisons to identify components of successful interventions. We found:

- Strong evidence from direct comparisons that programmes which involved both diet and exercise can lead to greater weight loss over a 12 to 18 month period than those that involve diet only or exercise only
- Strong evidence from indirect comparisons that programmes which specify a daily energy intake (i.e. a set calorie goal) are associated with greater weight loss than those that do not prescribe an energy intake

In Review 1, we also coded each intervention using taxonomy of behavioural change techniques. Though no groups of techniques were associated with greater weight loss, some techniques were common to the vast majority of programmes, namely:

- goal setting and review of goals (behaviour and outcome);
- action planning;
- barrier identification and/or problem solving;
- graded tasks;
- self-monitoring of behaviour;
- feedback on performance;
- instruction on how to perform behaviour; and
- planning social support and/or social change.

These findings suggest that behavioural weight management programmes involve people who are trained in counselling on diet and exercise (though they need not be the same person), in setting and calculating calorie goals, and in setting and reviewing behavioural and outcome (i.e. weight loss) goals. Our findings imply that people delivering BWMPs are familiar with behavioural change techniques including action planning, problem solving, setting graded tasks, advising on self-monitoring of behaviour, feeding back on participants' performance, providing instruction on how to perform eating and exercise behaviours, and planning social support and/or social change.

Summary and conclusions

There is evidence that BWMPs delivered by people who have received training in weight management can lead to significantly greater weight loss than multiple weight management sessions delivered by people who have not received specific weight management training. However, there is no evidence that any particular type of training leads to more effective BWMPs. The majority of interventions in Review 1 were delivered by people from a range of backgrounds, and (where reported) training ranged from two hours to four days, with lay people tending to receive the most training. Findings from Review 1 suggest that behavioural weight management programmes should involve people who are trained in counselling on diet and exercise (though they need not be the same person), in setting and calculating calorie goals, and in setting and reviewing behavioural and outcome (i.e. weight loss) goals, as well as in a range of other behavioural change techniques. Findings in review 2 suggest some additional areas that training could focus on, but these suggestions are purely speculative in nature.

Evidence statements

Please see the final agreed evidence statements for this guideline which are contained in a separate document on the NICE website. The final statements reflect conclusions drawn from reviews 1a, 1b, 1c and 2 (as appropriate)

Notes:

- Quality scores for individual studies are represented as ++, +, or -
- Unless stated otherwise, all studies were conducted in the UK
- In the instances where it is stated that there is 'no evidence' on a topic, this refers to the reviewers finding no evidence. As this was not intended to be a comprehensive review, it could be possible that relevant evidence exists which has not been found
- In statements relating to barriers and facilitators, where 'no evidence' was found this is specific to whether any evidence was identified that directly tested the area under question. The following lines of the evidence statements relate to *perceived* barriers and facilitators
- Highlighted text refers to documents that are commercial in confidence.

Evidence statement 2.1 Motivation for weight-loss

There is moderate evidence that people within BWMPs were largely motivated to lose weight for reasons of health and appearance. There is moderate evidence that older service users tended to be more motivated by improvements in health and younger service users tended to be more motivated by improvements in appearance. Evidence on health as a motivator is from 6 studies in the UK, 5 (++)[1] and one (+)[2]; and one systematic review[3]. Evidence on appearance as a motivation is from 6 studies in the UK, 4 (++)[4], one (+)[2] and one (-)[5].

1. Withnall 2008 (28), Gimlin 2007 (17), Greener 2010 (18), Herriot 2008 (19), Gray 2013 (4)
2. Rowe 2010 (12)
3. In press
4. Withnall 2008 (28), Gimlin 2007 (17), Greener 2010 (18),Herriot 2008 (19)
5. CONFIDENTIAL

Evidence statement 2.2 Views of group programmes

There is inconsistent evidence as to whether group support is perceived to be beneficial within BWMPs. In some studies, service users perceive group support to be one of the main benefits of attending a weight-loss programme. However, a number of studies described service users' negative responses to group support and desire for a personalised approach. Evidence in favour of group support is from 15 studies in the UK, nine (++)[1], four (+)[2] and two (-)[3]. Evidence in favour of more personalised support is from 8 studies in the UK, four (++)[4], two (+)[5] and two (-)[6].

1. Ahern 2013 (3),Gimlin 2007 (17),Greener 2010 (18), Herriot 2008 (19), Hunt 2013 (20), NHS North Somerset Doc 2 2013 (23), Visram 2009 (27), Gray 2013 (4), Withnall 2008 (28)

2. CONFIDENTIAL (7), CONFIDENTIAL (8), Rowe 2010 (12), Weight Management Services Research 2011 (6)
3. Hindle 2012 (9), CONFIDENTIAL (5)
4. Bidgood 2005 (15), Counterweight Project 2008 (16), Visram 2009 (27), Gray 2013 (4)
5. CONFIDENTIAL (7), CONFIDENTIAL (8)
6. NHS SCH. Shropshire Community Health NHS Trust Doc 1 2013 (10), Shropshire Community Health NHS Trust Doc 2. 2013 (11), CONFIDENTIAL (5)

Evidence statement 2.3 Views of male-only interventions

There is strong evidence that male service users believe the ability to have male orientated conversations is a benefit of attending men only weight-loss services. There is strong evidence that participants of men-only groups perceived an approach that fed into the male identity and encouraged competitiveness both with themselves and other men to be more effective. This is based on 3 studies in the UK, two (++)[1] and one (+)[2]; and one systematic review[3].

1. Hunt 2013 (20), Gray 2013 (4)
2. CONFIDENTIAL (7)
3. In press 2014 (13)

Evidence statement 2.4 Views of meeting structure and content

There is weak evidence that users perceive the routine of regular meetings as a benefit of attending a BWMP. This is based on 2 studies in the UK, one (++)[1] and one(-)[2]. There is strong evidence that a regular weigh in by a group leader or health professional was seen by service users as a strong motivator for changing their behaviour and reaching their targets. This is based on 6 studies in the UK, all (++)[3].

1. Counterweight Project 2008 (16)
2. Hindle 2012 (9)
3. Ahern 2013 (3), Allan 2010 (14), Herriot 2008 (19), NHS North Somerset Doc 2 2013 (23), Penn 2008 (24), Reed 1999 (25)

Evidence statement 2.5 Views of programme characteristics

There is strong evidence that users of BWMPs with supervised physical activity perceived this to be an effective component, and strong evidence that users of BWMPs without supervised physical activity would have liked it to have been incorporated. This is based on 7 studies in the UK, four (++)[4], one (+)[5] and two (-)[6].There is strong evidence that users perceive the personality and approach of the group leader to impact the effectiveness of the programme. This is based on 11 studies in the UK, two (++)[1] and three(+)[2] and two (-)[3]. There was strong evidence that participants of BWMPs felt that longer term support would be beneficial, regardless of initial programme length. This is based on 11 studies in the UK, six (++)[7], two (+)[8], and three (-)[9].

1. Herriot 2008 (19), Gray 2013 (4)
2. CONFIDENTIAL (7), Weight Management Services Research 2011 (6), Rowe 2010 (12)
3. Hindle 2012 (9), Shropshire Community Health NHS Trust Doc 2. 2013 (11)
4. Ahern 2013 (3), Allan 2010 (14), NHS North Somerset Doc 2 2013 (23), Withnall 2008 (28)
5. CONFIDENTIAL (8)

6. CONFIDENTIAL (5), NHS SCH. Shropshire Community Health NHS Trust Doc 1 2013 (10), Shropshire Community Health NHS Trust Doc 2. 2013 (11)
7. Bidgood 2005 (15), Counterweight Project 2008 (16), Gray 2013 (4), Greener 2010 (18), Herriot 2008 (19), Nield 2012 (22)
8. CONFIDENTIAL (7), CONFIDENTIAL 2012 (8)
9. CONFIDENTIAL 2012 (5), NHS SCH. Shropshire Community Health NHS Trust Doc 1 2013 (10), Shropshire Community Health NHS Trust Doc 2. 2013 (11)

Evidence statement 2.6 Views of dietary components of BWMPs

There is strong evidence that users and potential users of BWMPs prefer diets with a simple message, which do not ban particular foods, are considered family friendly, do not incur any extra cost and are not perceived to be repetitive or boring. Users and potential users of BWMPs perceived these types of diet to be more successful. This is based on 6 studies in the UK, three (++)[1], two (+)[2] and one (-)[3].

1. Withnall 2008 (28), Herriot 2008 (19), Gray 2013 (4)
2. CONFIDENTIAL (8), Rowe 2010 (12)
3. CONFIDENTIAL (5)

Evidence statement 2.7 Barriers to attendance

There is strong evidence that practical issues were perceived by users to be the main barriers to attendance at BWMPs. These practical issues were childcare, work, cost and time. This is based on 12 studies in the UK, eight (++)[1], three (+)[2] and one (-)[3]. There is moderate evidence that feeling judged, stigmatized or embarrassed was a further barrier to attendance. This is based on 7 studies in the UK, five (++)[4], one (+)[5], one (-)[3]. Finally, there is weak evidence that users perceived not losing weight to be a barrier to further attendance. This is based on 2 studies in the UK, one (++)[6] and one (+)[7].

1. Ahern 2013 (3), Counterweight Project 2008 (16), Gray 2013 (4), Greener 2010 (18), Lavin 2006 (21), NHS North Somerset Doc 2 2013 (23), Thompson 2000 (26), Withnall 2008 (28)
2. CONFIDENTIAL (8), Weight Management Services Research 2011 (6), Rowe 2010 (12)
3. CONFIDENTIAL (5)
4. Bidgood 2005 (15), Counterweight Project 2008 (16), Gray 2013 (4), Thompson 2000 (26), Withnall 2008 (28)
5. Weight Management Services Research 2011 (6)
6. Lavin 2006 (21)
7. CONFIDENTIAL (8)

Evidence statement 2.8 Facilitators to delivery: structural

There is no evidence as to what structural components facilitate BWMP delivery. However, there is moderate evidence that the following structural components are perceived to act as facilitators to provision and delivery of BWMPs: active GP and primary care staff involvement (8), (16) and clear routes of communication between primary care staff and BWMP providers (16), (21), (8). This is based on qualitative data from three UK studies: two (++)[1] and one (+)[2].

1. Counterweight Project 2008 (16), Lavin 2006 (21)

2. CONFIDENTIAL (8)

Evidence statement 2.9 Facilitators to delivery: opinions and attitudes

There is no evidence as to whether the opinions and attitudes of primary care staff and commissioners facilitate BWMP provision. However, there is moderate evidence that some primary care staff and commissioners hold the following positive opinions and attitudes: perceptions that BWMPs are effective at inducing weight loss (16), (18), (30), (8); confidence amongst primary care staff in their ability to raise and tackle the topic of obesity with patients (29), (30); and perceiving obesity treatment to fall within their role (29). This is based on qualitative data from five studies conducted in the UK, in which the majority of respondents were practitioners engaged with programme delivery: three (++)[1] and two (+)[2]

1. Counterweight Project 2008 (16), Greener 2010 (18), Hoppe 2007 (30)
2. Report from the Campaign Company 2008 (29), CONFIDENTIAL (8)

Evidence statement 2.10 Barriers to service delivery: opinions and attitudes

There is no evidence as to whether the opinions and attitudes of primary care staff and commissioners act as barriers to BWMP provision. There is moderate evidence that some people directly and indirectly involved with provision of BWMPs hold negative attitudes around the effectiveness of these programmes. There is also moderate evidence that some health care providers perceive obesity management to be outside of their primary role and that some health care providers perceived issues with insufficient training, knowledge, or ability to motivate patients. Evidence on perceived lack of effectiveness comes from seven studies conducted in the UK, four (++)[1], two (+)[2], and one (-)[3]. Evidence on perceived role and abilities comes from five studies conducted in the UK, four (++)[1] and one (-)[3].

1. Counterweight Project 2008 (16), Epstein 2005 (31), Greener 2010 (18), Hoppe 2007 (30)
2. Report from the Campaign Company 2008 (29), CONFIDENTIAL (8)
3. Hindle 2012 (9)

Evidence statement 2.11 Best practice for referral to BWMPs

There was no evidence with which to judge the impact of referral programmes on subsequent take up and adherence to BWMPs. Five studies described processes currently in place for referral into BWMPs: four of these required some form of approval or referral from primary care staff. There was weak evidence that participants who were referred by a GP had an increased sense of obligation and responsibility to attend due to the use of public funding and accountability to the GP. This is based on qualitative data from four studies conducted in the UK, two (++)[1] and two (+)[2]. Two studies were evaluations of the same commercial weight management programme. There is moderate evidence that some primary care staff lack adequate understanding of the referral process to BWMPs. Evidence comes from qualitative data from four studies conducted in the UK, one (++)[3] two (+)[4] , and one (-)[5].

1. Counterweight Project 2008 (16), Visram 2009 (27)
2. CONFIDENTIAL (7), CONFIDENTIAL (8)
3. Gray 2013 (4)

4. Report from the Campaign Company 2008 (29), CONFIDENTIAL (8)
5. Hindle 2012 (9)

Evidence statement 2.12 Commissioning

There is no evidence that commissioning in one way compared to commissioning in another way leads to better outcomes for users of behavioural weight loss services. There are four pieces of guidance to commissioners which are derived from expert opinion informed by reviews of relevant literature, though one piece of guidance is primarily orientated towards commissioning hospital-based weight management services.[1] One piece of guidance states that services should be commissioned that operate in line with NICE guidelines on the management of obesity.[2] One piece of guidance states that services should report on a comprehensive range of baseline and follow-up data,[3] though another piece of guidance reflects uncertainty about the practicability of assessing changes in diet and physical activity.[4]

1. Physicians 2013 (33)
2. Cavill 2010 (34)
3. Roberts 2009 (35)
4. Department of Health 2013 (32)

Evidence statement 2.13 Commissioning

One piece of guidance states that commissioned services should report data on attendance and weight loss and that these be used as evidence that the service is effective.[1] In randomised trials where the 95% confidence intervals showed more than 2kg difference in weight loss compared with controls at 12 months, five out of five interventions that reported sufficient data (see evidence statement 1.1 to 1.3) would have met the attendance standard defined by the guidance as indicating effectiveness (i.e. 60% of participants complete the intervention*) and 14 out of 14 interventions would have met at least one of the weight loss standards (i.e. 3% mean weight loss and at least 30% of participants lose at least 5% of their initial weight) **. In randomised trials where the 95% confidence intervals showed a less than 2kg difference in weight loss compared with controls at 12 months, one out of one interventions would have met the attendance standard and none of eight met the weight loss standard defined as indicating effectiveness in the guidance. This suggests that the standards defined by the guidance are able to help identify interventions that are more likely to be effective.

1. Department of Health 2013 (32)

* This means a minimum of 60% of all engaged participants complete the intervention. Engaged participants are those who have attended at least 2 sessions of the intervention. Completion is measured as participants attending at least one of the last three sessions of the intervention.

** Participants who have attended at least 1 session of the intervention achieve a mean weight loss of at least 3% of their initial weight, at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention). At least 30% of all participants have achieved a weight loss equal to or greater than 5% of their initial weight at the end of the intervention. This minimum standard is using BOCF analysis (classed as all participants who have attended at least 1 session of the intervention)

Evidence statement 2.14 Training

There is no evidence that any particular type of training leads to more effective BWMPs. There is strong evidence from a meta-analysis that BWMPs can lead to significantly greater weight loss than multiple weight management sessions delivered by people who have not received specific weight management training (mean difference -4.30 kg, 95% CI -4.66 to -3.93), though statistical heterogeneity was substantial (I^2 = 94%). Evidence comes from eight randomized controlled trials: five conducted in the USA (all ++)[1]; one conducted in New Zealand (+)[2]; one conducted in Switzerland (-)[3]; and one multicentre study conducted in Germany, the UK, and Australia (+)[4].

1. Diabetes Prevention Programme Research (49), Heshka 2003 (63), Rock 2010 (46), Vilareall 2010 (44), Wadden 2011 (74)
2. Dale 2009 (40)
3. Munsch 2003 (69)
4. Jebb 2011 (2)

Discussion

Summary

This review covers the commissioning, training, service issues, users' perspectives, and referral process to behavioural weight management programmes. In three of these topics (service issues, users' perspectives, and referral), we conducted systematic but not comprehensive reviews of primary data. In the commissioning review, we drew on guidance but then tested the usefulness of performance standards against the guidance. In the training section, we drew mostly on what we know about effective programmes from previous work (Review 1) and reported how people who delivered those were trained, as well as drawing upon participants reports of the kind of elements that they found helpful in those programmes. There were limitations within both our review process and the nature of the evidence available. These are discussed below and are organised by section.

Limitations

User's perspectives

We found most evidence for the users' perspectives review, but it is worth reflecting critically on this. Most of this evidence drew either implicitly or explicitly on people who were attending weight management programmes, usually group format programmes. People who do not achieve success with this method of weight loss stop attending so these reports reflect what 'successes' feel about the programmes. We know that many people drop out of programmes and it is possible that the very things that successes find appealing and apparently contribute to effectiveness are those that drive others away. There was scant evidence on what people who dropped out found unappealing or why the services they attended apparently did not work for them. Instead, the qualitative data reflect quantitative data that people who are not losing weight cease attending weight loss programmes. A second issue with the qualitative data is that it mostly reflects relatively brief process evaluations of programmes. That is, the researchers asked participants for their reflections and then described these in their reports. No reports tried to synthesise these into some kind of framework that reflected a more theoretical understanding of how elements of the weight management programmes worked, nor for the most part did they probe participants for their underlying reasoning behind their statements. It is also worth noting that in this review we excluded 'second-hand' reflections. It was relatively common in the literature to find remarks about what users wanted, valued, or would find effective but that were not made by users themselves. We did not report such remarks in our themes. For the most part, the section on user views is a list of a series of attributes that users find appealing.

Services

The data on service issues were limited. No studies we reviewed aimed primarily to investigate the barriers and facilitators of service delivery. Furthermore, no studies interviewed service providers and very few interviewed public health planners for their perspectives to understand the broader issues that determine where, when, and how services are provided and paid for and the constraints on them. Instead, the data were derived either from interviews with patients or with primary

healthcare professionals, or, in some cases, from inferences made by report authors based on their investigations. In the latter case, these inferences were often made without describing an explicit process of moving from the data to the inference. Nevertheless, there was clear evidence that what primary care professionals needed was evidence of effectiveness and a clear system of referral. It is striking that referrals to most clinical services are relatively easy to make and can be made by letter, whereas referrals to weight management programmes are often made on special forms that are not integrated into GP computer systems and where patients have to meet various criteria and perhaps deal with some intermediary body. These were perceived as a barrier to engagement. A system whereby the weight management programme provided GPs with information on their patients' progress, as is common in clinical practice, seemed to facilitate engagement.

Referral

As the data on service issues was derived from primary care teams who referred to services it inevitably touched on referral, which formed a separate section within this review. We had hoped to see quantitative data on uptake and engagement of people with weight loss programmes depending upon whether or not referrers were trained and whether or not systems were in place to filter referrals. There was only one before-after study that examined the impact of training, though it did so rather inadvertently and was not primarily reporting on this. It showed that training in raising the issue of weight was associated with a decrease in referrals, though there was no information on the impact on outcomes. The study did not reflect on this in detail but speculated that this could have been due to the economic downturn. In a parallel field of public health practice, namely smoking cessation, we have evidence that opportunistic intervention by GPs and referral to smoking cessation services improves the outcome for patients.(76, 77) We also have trials showing that training of GPs leads to greater engagement and cessation among patients of GPs who have been trained compared with patients of GPs who were not trained.(78) The data on referrals to weight loss programmes is strikingly poor compared with this. Clinicians in the studies we reviewed reported raising weight with patients when weight was directly clinically relevant and rarely 'out of the blue'. Health improvement of people with existing health problems was a prime motive for clinicians and this fits with quantitative findings based on GP recordings from the Netherlands that weight loss is used as treatment, not primarily as prevention in healthy patients.(79) One study in this review offered participants who were obese and were attending a GP surgery for reasons unrelated to weight a free weight loss programme. Most patients accepted referral and most of them completed the programme, (21) which indicates that opportunistic interventions may not be as difficult or unwelcome as clinicians seemed to fear. Our review found no data on the utility of systems to screen referrals, which are widely implemented. Typically they aim to assess motivation but there is no data from this review of weight loss programmes that screening and assessment of motivation enhances adherence to weight loss programmes. Evidence from other fields of public health show such systems screen out most people who would have taken up a treatment programme and that such screening does not predict success with the programme.(80) Evidence from trials indicates that allocating people to a treatment programme that they do not choose leads to equal or perhaps greater weight loss than allowing people to choose a programme that they think suits them best.(81) These data may suggest that prior motivation is a poor predictor of outcome and that systems to assess it and arrange treatment or deny treatment based upon this may not be helpful. There is, however, no direct evidence on the utility of such systems.

General limitations

One issue that applies to all sections is that of conflict of interest. The evidence tables detail the funder of the research, but conflicts of interest go beyond issues of funding. It is common, for example, for companies to commission independent researchers to evaluate commercial programmes, but for the contract to state that the data belong to and are analysed by the researchers, and that the decision to publish findings is that of the researchers. In other cases, companies commission in-house evaluations, and we had several examples of this in the review. PCTs also commission in-house evaluations. In both cases, there may be a perceived conflict, in one case commercial, and in the other personal. It is often the case that such evaluations are done by people who are personally invested in the outcome of the service. It was not possible to assess this from the reports and nor is there evidence that this inevitably leads to biased evaluations.

How this research fits in with findings from effectiveness reviews

In Review 1, we considered the effectiveness of BWMPs and how their characteristics or components affected or were associated with weight loss. We found that behavioural weight management programmes can lead to weight loss at 12 to 18 months, that programmes that involved both diet and exercise were more effective than those that involved diet or exercise only, and that providing a set energy target and dietitian involvement were associated with greater weight loss. We also found that after the programme ended, the intervention group gained approximately half a kilogram per year more than those in the control group and that programmes incorporating specific equipment or requiring special settings for physical activity were associated with a significant increase in the rate of weight regain after the programme had ended.

Review 2 adds additional context to the use and delivery of behavioural weight management programmes in the UK, and is intended to supplement, but never replace, the effectiveness data reported in Review 1. In particular, users and services sections of Review 2 include information on perceptions of effectiveness. Though it depends on how effectiveness is defined, if effectiveness is defined as a programme's ability to induce weight loss, evidence from Review 1 should take precedence over that in Review 2. For example, though it is valuable to know that some participants perceived supervised exercise to increase programme effectiveness, Review 1 did not detect a relationship between the provision of supervised exercise and weight loss at 12 to 18 months. Information on perceived effectiveness is from an individual perspective, and as discussed previously, is subject to a positive bias as the majority of users' views we included were those of participants who had been programme 'successes.' This should be borne in mind when comparing findings from Review 2 to quantitative results from Review 1.

As a whole, data from Review 1 shows that behavioural weight management programmes can induce weight loss, but that programmes vary widely in their effectiveness, and this is only partially explained by the characteristics we explored. Data from Review 2 is about experiences with and implementation of these programmes. It aims to paint a more complete picture than data from Review 1 alone, but is limited by the parameters of the research and the nature of the available evidence.

Appendices

Appendix 1. Review 2 protocol

Review team

This project will be conducted by a team of researchers from two different institutions. The team members, and their roles on the review, will be:

Paul Aveyard, Professor of Behavioural Medicine, Department of Primary Care Health Sciences, University of Oxford	Lead systematic reviewer. Making key methodological choices within the systematic review. Chair meetings of the review team. Overall responsibility for delivery to NICE, ensuring report meets agreed protocol, discussing and agreeing with NICE any divergences from protocol. Writing and editing drafts and final report. Acting as third reviewer in cases of controversy.
Jamie Hartmann-Boyce, Research Associate, Department of Primary Care Health Sciences, University of Oxford	Systematic reviewer. Project managing the delivery of the various parts of the project. Working with NICE on search methods. Screening, appraisal and data extraction of included studies. Writing and editing drafts and final report.
David Johns, Investigator Scientist, MRC Human Nutrition Research	Systematic reviewer. Screening, appraisal and data extraction of included studies. Writing and editing drafts and final report.
Rafael Perera, Director Statistics Group, Department of Primary Health Care Sciences, University of Oxford	Statistics advice.

Advisory team

In addition to the core project team, we have a team of advisors who the core team will call upon particularly for matters relating directly to their areas of expertise, as identified below.

Carolyn Summerbell, Professor of Human Nutrition and Principal of John Snow College, Durham University	Advice on matters relating to systematic review methodology
Jane Ogden, Professor in Health Psychology, Department of Psychology, University of Surrey	Guidance on psychological theories and patients views and perceptions regarding weight loss programmes
Susan Jebb, Head of Department, Diet and Population Health, MRC Human Nutrition Research	Advice in relation to dietary prescriptions
Dawn Phillips, Public Health Portfolio Lead for Adult	Guidance on clinical aspects and

Obesity and Physical Activity, County Durham	commissioning
Amanda Lewis, NIHR SPCR Research Fellow, Department of Primary Care Health Sciences, University of Oxford	Guidance on research into weight management in primary care
Igho Onakpoya, Researcher in Pharmacovigilance, Department of Primary Care Health Sciences, University of Oxford	Advice on systematic review methodology

Key deliverables and dates

Deliverable	**Date**	**Comments back from NICE CPHE by:**
1st Draft review protocol	17 December 2012	4 January 2013
Revised review protocol	28 February 2013	
Signing-off of review protocol	6 March 2013	
Signing-off of search strategy	14 March 2013	
Interim progress meeting/ teleconferences (1) –	20th March, 4th April, 17th April, 1st May [AC chasing other dates]	
Draft report submitted to NICE ('drip feeding')	26 April 2013 – 10 May 2013	
Amended report submitted to NICE	17 May 2013	
Slides for PDG meeting submitted to NICE	28 May 2013	
Review presented to PDG	4 June 2013	
Final review submitted	19 June 2013	

Context

This Review Protocol is for Review 2. We have completed Review 1, now termed Review 1a and are currently completing Review 1b. In consultation with NICE, we have split the work outlined in the two tender documents into three reviews. This protocol therefore covers work in the Evidence Review tender that is not covered in Review 1b.(Review 1b covers questions 1, 2 and 4).

Purpose of this document

This document describes the aims, scope and methods of Review 2 which will be produced to support the development of NICE Public Health Guidance on lifestyle weight management programmes for overweight and obese adults.

Unless otherwise stated in this review protocol, this review, and its report will be conducted according to the rigorous methods described in the Cochrane Handbook, the York Centre for Reviews and Dissemination Handbook, and the 2nd Edition of the *Methods for the development of NICE public health guidance* (2009).

Clarification of scope

This review aims to examine evidence that helps to develop an understanding of how multicomponent behavioural weight management programmes are commissioned, run and viewed by users and health professionals. Reviews 1a and 1b examine the effectiveness of such programmes and the characteristics associated with greater effectiveness. The review will be restricted to interventions that are judged to be feasible for implementation in the UK.

Review questions

The review covers the following questions, with the numbers reflecting the numbers in the tender.

3. What are the views, perceptions and beliefs of adults in relation to lifestyle weight management programmes (whether or not they use such programmes)? How can overweight and obese adults from a diverse range of backgrounds be encouraged to join, and adhere to, these programmes?

5. What barriers and facilitators affect the delivery of effective weight-management programmes for adults and how do they vary for different population groups?

6. What are the best practice principles for primary care when referring people to commercial, voluntary or community sector or self-help lifestyle weight management programmes?

7. What are the best practice principles for commissioners of lifestyle weight management services for adults?

8. What training is needed for professionals involved directly or indirectly with lifestyle weight management programmes for adults?

9. How should lifestyle weight management programmes be monitored and evaluated locally?

3. What are the views, perceptions and beliefs of adults in relation to lifestyle weight management programmes (whether or not they use such programmes)? How can overweight and obese adults from a diverse range of backgrounds be encouraged to join, and adhere to, these programmes?

This question covers the views, perceptions and beliefs adults hold which affect their take-up of programmes and their experience during them and how these views, perceptions and beliefs vary across population subgroups. This question is about the users of the services and how their feelings affect uptake and adherence.

Inclusion criteria

Population

- Adults (≥ 18 years) classified as overweight or obese, i.e. people with a BMI of ≥ 25 kg/m2 and ≥ 30 kg/m2, respectively.
- Studies in children, pregnant women, and people with eating disorders will not be included, nor studies specifically in people with a pre-existing medical condition such as diabetes, heart failure, uncontrolled hypertension or angina.

Focus

The studies will concern views, perceptions and beliefs of adults towards starting weight loss programmes or towards continuing to attend them given that they have started.

Types of studies

- Qualitative or quantitative cross-sectional or longitudinal studies, published since 1995.
- Systematic reviews will be used as a source of references.

Location

- Undertaken in any setting (e.g. community, commercial, primary care and online).
- Studies conducted in the UK only will be considered for inclusion.

Search methods

The aim is to be systematic but not comprehensive and thus our searches will concentrate on specificity over sensitivity. We will use the same searches in the same databases as included for Review 1a, but somewhat modified (Medline, Medline in Process, Embase, Psycinfo, Cochrane (CENTRAL, DARE, CDSR), BIOSIS, SCI, CPCI). We will remove the filters that aimed to confine the search to randomised controlled trials and we will also include terms to pick up specific keywords and text words covering beliefs, attitudes etc. We will search two additional social science databases, as well: ASSIA and Sociological abstracts. In addition to database searches, we will screen reference lists of included studies and run citation searches on included studies, source relevant data from studies included in Review 1, and contact experts in the field. The detailed search strategy will be agreed separately between reviewers and the CPHE's information specialist. We will search through literature submitted as part of the call for evidence. All searches will be recorded in accordance with section 4.4 of the NICE methods Manual (2012).

Study selection process

Assessment for inclusion will be undertaken initially at title and/or abstract level (to identify potential papers/reports for inclusion) by a single reviewer (and a sample checked by a second reviewer), and then by examination of full papers. A third reviewer will be used to help adjudicate inclusion decisions in cases of disagreement. Where the research methods used or type of initiative evaluated are not clear from the abstract, assessment will be based upon a reading of the full paper. We will include both quantitative and qualitative data in the review.

Quality assessment

The quality assessment will follow the methods outlined in the CPHE manual, either for quantitative data or qualitative data, using the assessment checklist. The aim is to describe the views, feelings etc of potential and actual participants, so notions of hierarchy of evidence do not apply. One reviewer will appraise each study though will consult with colleagues over matters of uncertainty.

Data synthesis and presentation, including evidence statements

The lead reviewer will extract data in narrative form to assess the frequency of salient beliefs are expressed in quantitative studies and the range of views expressed in qualitative studies. If any cohort studies have related beliefs and attitudes to attendance or adherence then we will give these most weight in the narrative synthesis. If no such studies exist then we will report this explicitly,

noting that the beliefs and attitudes expressed are not known to be related to either attendance or adherence to behavioural weight loss programmes.

5. What barriers and facilitators affect the delivery of effective weight-management programmes for adults and how do they vary for different population groups?

This relates to the features of services that determine whether, where and how they are provided and how services interact with other elements of the public health system to facilitate or hinder the use of services. This question therefore concerns the providers of the services and complements question 3, which covers the perceptions of services by possible and current users, and question 6, which concerns the referrers and the referral process. Data from Review 1 will not be relevant to this question.

Inclusion criteria

Population

- The views of and experiences of service providers on how they interact with the users as well as the public health system, including commissioners and providers of other relevant services, such as primary care services
- The views of and experiences of commissioners of public health services about the characteristics of the particular providers on offer and their distribution and cost
- Descriptive studies that describe the distribution, costs or management practices of weight management services.

Types of studies

Qualitative or quantitative cross-sectional or longitudinal studies, published since 1995.

Location

Studies conducted in the UK only will be considered for inclusion.

Search methods

The aim is to be systematic but not comprehensive. We will use the same searches in the same databases as included for Review 1a (Medline, Medline in Process, Embase, Psycinfo, Cochrane (CENTRAL, DARE, CDSR), BIOSIS, SCI, CPCI), but somewhat modified. We will remove the filters that aimed to confine the search to randomised controlled trials and we will also include terms to pick up specific keywords and text words. We will also search ASSIA and Sociological Abstracts. The detailed search strategy will be agreed separately between reviewers and the CPHE's information specialist. We anticipate that there little published academic literature on this topic so we will draw upon grey literature to answer this question. The review team will search the studies register of the following sites National Obesity Observatory's list of studies, the Obesity Learning Centre, EPPI Centre DePHER, Cochrane Public Health Group Specialized Register, Association for the Study of Obesity http://www.aso.org.uk/, European Association of the Study of Obesity http://www.easo.org/, Joseph Rowntree Foundation http://www.jrf.org.uk/ , Scottish Government http://home.scotland.gov.uk/home, Welsh Government http://wales.gov.uk/?lang=en. In addition, the team will consult with UK experts in this area for relevant literature, including with our advisory panel. We will search through literature submitted as part of the call for evidence. We will search the reference lists and run citation searches on included studies.

Study selection process

One reviewer will assess eligibility by reading the full texts of studies that are potentially relevant and assessing them against the characteristics against the inclusion criteria. If there is uncertainty, a second or third reviewer will help decide inclusion.

Quality assessment

One researcher will assess the study quality following the methods outlined in the CPHE manual, either for quantitative data or qualitative data, using the assessment checklist. The aim is to describe the distribution and management practices of weight management services so notions of hierarchy of evidence do not apply. One reviewer will appraise each study though will consult with colleagues over matters of uncertainty.

Data synthesis and presentation, including evidence statements

Data will be extracted in narrative form to assess and synthesise the evidence on how services are distributed, organised, managed and commissioned. We will integrate evidence from quantitative and qualitative studies.

6. What are the best practice principles for primary care when referring people to commercial, voluntary or community sector or self-help lifestyle weight management programmes?

This relates to what primary care providers can say or do to affect the likelihood of patients taking up referral to and adhering to weight loss programmes. It also relates to the characteristics of different referral systems and how those characteristics affect take up and adherence to the programme.

Inclusion criteria

Population

Adults defined as overweight or obese who are offered referral to weight loss programmes.

Types of studies

Qualitative or quantitative cross-sectional or longitudinal studies or randomised controlled trials, published since 1995.

Location

Studies conducted in the UK only will be considered for inclusion.

Search methods

The best evidence on how to refer patients for weight loss management may come from randomised trials testing one referral method against another for effects on uptake and adherence, but we doubt that such trials exist. We will use the same searches in the same databases as included for Review 1a (Medline, Medline in Process, Embase, Psycinfo, Cochrane (CENTRAL, DARE, CDSR), BIOSIS, SCI, CPCI), but somewhat modified. We will remove the filters that aimed to confine the search to randomised controlled trials and will also include terms to pick up specific keywords and text words. The detailed search strategy will be agreed separately between reviewers and the CPHE's information specialist. All searches will be recorded in accordance with section 4.4 of the NICE methods Manual (2012). We will screen reference lists of included studies and conduct citation searches on included studies.

We anticipate that few studies of this kind will be published in academic literature so we will search grey literature. We will search the National Obesity Observatory's and the Obesity Learning Centre's list of relevant service level evaluations. The grey literature will include studies on the following websites: Association for the Study of Obesity http://www.aso.org.uk/, European Association of the Study of Obesity http://www.easo.org/, Joseph Rowntree Foundation http://www.jrf.org.uk/, Scottish Government http://home.scotland.gov.uk/home, Welsh Government http://wales.gov.uk/?lang=en. We will search through literature submitted as part of the call for evidence. We will also seek advice from our expert advisory panel and conduct citation searches on relevant articles that we find.

Study selection process

Assessment for inclusion will be undertaken initially at title and/or abstract level (to identify potential papers/reports for inclusion) by a single reviewer and then by examination of full papers. A second reviewer will be used to help adjudicate inclusion decisions in cases where this is not clear. Where the research methods used or type of initiative evaluated are not clear from the abstract, assessment will be based upon a reading of the full paper.

Any studies noted in the review for Question 3 that shed light on participants', GPs', commissioners' or providers' views on referral systems will also be included if insufficient evidence of the effect of one system over another is available.

Quality assessment

The lead reviewer will assess the degree to which the samples are representative of the population to which we wish to generalise and the degree to which the methods used to collect data are appropriate and unbiased. The methods we use will depend upon the study type we find, but will be derived from the methods and checklist in the CPHE manual.

Data synthesis and presentation, including evidence statements

We will extract data in narrative form to assess whether there is any evidence that speaks to the effectiveness of one referral method or another. In the absence of this, we will synthesise patients and GPs views on referral for weight loss programmes. Note that this is distinct from their views of the programmes themselves, which is covered under Question 3.

7. What are the best practice principles for commissioners of lifestyle weight management services for adults?

Commissioners will need to know several things:

- Which existing programmes are known to be effective? Identified in Review 1a
- The effective components of weight loss services. We will identify this in Review 1a and in Review 1b. This may allow commissioners to commission other services that are not supported directly by evidence from trials, but indirectly because they do what has proven effective in trials
- We will use the findings of the expert advisory group convened by the Department of Health in October 2012 and published in March 2013 to guide our work. This standard for commissioning and monitoring services can be thought of as akin to the guideline for weight loss interventions produced by the BDA and described by NICE as best practice principles. In Review 1b protocol, we described how we would test these principles against evidence derived from

Review 1a and we will produce analogous data here. We will use data from effective interventions to see whether the standards proposed are consonant with what was observed in the trials and whether it is possible to produce an effective service without meeting the standards or whether it is possible to meet the standards and yet be providing an ineffective service

- We will search the guidelines database http://www.tripdatabase.com/ and the NOO website, for guidelines on commissioning and summarise these.

8. What training is needed for professionals involved directly or indirectly with lifestyle weight management programmes for adults?

This relates to the skills required by professionals delivering a behavioural weight management programme. Those indirectly involved include referrers and people assessing the suitability of people for a behavioural weight loss programme.

The data to assess skills required by people delivering programmes will come from Review 1a and Review 1b, where we will investigate the training of the therapist using meta-regression of the outcome data of the trials in the review. In addition, the review team will identify the precise skills needed by identifying the behavioural change techniques involved in delivering successful programmes. We will also consider the skills, competencies or qualities of people delivering programmes through questions 5 and 6, by focusing on people's views and perceptions about the weight management service and thinking through what might be needed to address this. Literature on how these views might be addressed will also be included in questions 5 and 6 be drawn out here.

9. How should lifestyle weight management programmes be monitored and evaluated locally?

We will examine how services should be monitored in Question 7, which considers how programmes should be commissioned and part of commissioning involves monitoring. The methods for this are described there. We will also consider the use of the National Obesity Observatory standard evaluation framework and examine whether the essential and desirable elements in the document have any evidence that they are essential to monitor and evaluate weight management services. We will also consult with the commissioner on our expert advisory panel regarding existing practice and information on monitoring and evaluating such programmes.

Evaluation includes notions of whether a service is worthwhile or not. This hinges upon cost-effectiveness. We will examine data on the cost-effectiveness of services in Review 1a. In addition, NICE have commissioned a separate and detailed look at the cost-effectiveness of services for weight loss. Given these data, it will be possible to produce a table of costs and of mean weight loss at programme end that shows where a service would cease to be cost-effective by NICE standards.

Appendix 2. Search methods for users, services and referral questions (previously questions 3, 5 and 6)

Medline via Ovid 28.3.13 to 1946 to March week 3 2013

1	Obesity/ or Obesity, Morbid/ or Obesity, Abdominal/	123432
2	exp weight gain/	20710
3	Overweight/	9331
4	(overweight or over weight or overeat* or over eat* or overfeed* or over feed*).ti,ab.	32084
5	(weight adj1 gain*).ti,ab.	39319
6	obes*.ti,ab.	142123
7	or/1-6	222788
8	(modific* or therap* or intervention* or strateg* or program* or management or scheme* or group* or pathway*).ti,ab.	5155494
9	(weight adj1 los*).ti,ab.	48508
10	(weight adj1 reduc*).ti,ab.	8462
11	exp weight loss/	25411
12	8 and (9 or 10 or 11) (including related terms)	14739
13	Obesity/dh, pc, th (including related terms)	13078
14	Obesity, Morbid/pc, dh, th (including related terms)	10150
15	8 and (13 or 14) (including related terms)	10661
16	Diet Therapy/	9212
17	Diet, Fat-Restricted/	2565
18	Diet, Reducing/	8969
19	Dietetics/ed, mt (including related terms)	4812
20	(diet or diets or dieting).ti,ab.	211664
21	(low calorie or hypocaloric or calorie control*).ti,ab.	3124

22	(health* adj1 eating).ti,ab.	2548
23	(diet* adj2 (modific* or therapy or intervention* or strateg* or program* or management or scheme*)).ti,ab.	14586
24	(nutrition adj2 (modific* or therapy or intervention* or strateg* or program* or management or scheme*)).ti,ab.	5357
25	(Weight Watchers or weightwatchers).ti,ab.	67
26	(slimming world or slimmingworld).ti,ab.	6
27	(lighterlife or "lighter life").ti,ab.	1
28	or/16-27	238879
29	8 and 28	116178
30	exp exercise/	100276
31	exercise therapy/	23607
32	(exercise and (therapy or therapies or activity or activities or class* or program* or group* or session* or scheme*)).ti,ab.	82718
33	(Gym and (trainer* or therap* or activit* or class* or program* or group* or session* or scheme* or club*)).ti,ab.	269
34	(walk* or step* or jog* or run*).ti,ab.	510052
35	(aerobic* or physical therap* or physical activit*).ti,ab.	104149
36	(fitness adj (class or regime* or program* or group* or session* or scheme*)).ti,ab.	644
37	(reduc* adj2 sedentary behavio?r).ti,ab.	81
38	(dance and (therap* or activit* or class* or program* or group* or session* or scheme*)).ti,ab.	951
39	personal trainer*.ti,ab.	48
40	(gym or gyms or gymnasium*).ti,ab.	800
41	or/30-40	712020
42	cognitive therapy/	13868
43	Counseling/	26327

44	behavior therapy/	22566
45	cognitive therapy/	13868
46	behavio?ral intervention*.ti,ab.	4155
47	(change* adj2 lifestyle*).ti,ab.	4756
48	(changing adj2 lifestyle*).ti,ab.	239
49	(lifestyle adj2 modif*).ti,ab.	3239
50	Hypnosis/	7953
51	Counseling/	26327
52	(counseling or counselling).ti,ab.	51520
53	or/42-52	116005
54	12 or 15	22599
55	7 and 28	39383
56	7 and 41	26512
57	7 and 53	6939
58	(55 and 56) or (55 and 57) or (56 and 57)	10401
59	Anti-Obesity Agents/	2848
60	(sibutramine or orlistat or rimonabant).ti,ab,nm.	3853
61	exp Bariatric Surgery/	12646
62	exp obesity/su	9211
63	59 or 60 or 61 or 62	20417
64	58 not 63	9656
65	limit 64 to (english language and humans)	8239
66	limit 65 to ("all infant (birth to 23 months)" or "all child (0 to 18 years)" or "newborn infant (birth to 1 month)" or "infant (1 to 23 months)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)")	2671

67	65 not 66	5568
68	limit 67 to yr="1995 -Current"	4716
69	(weight adj3 intervention*).ab,ti.	1904
70	(weight adj3 program*).ab,ti.	3185
71	(weight adj3 service*).ab,ti.	96
72	(Weight Watchers or weightwatchers).ti,ab.	67
73	(slimming world or slimmingworld).ti,ab.	6
74	(lighterlife or "lighter life").ti,ab.	1
75	(rosemary conley or rosemaryconley).ti,ab.	4
76	(jenny craig or jennycraig).ti,ab.	2
77	(Weight adj3 (group* or organi?ation or initiative* or scheme* or project*)).ti,ab.	9318
78	(slim* adj1 (world or organisation or organization or group or club)).ti,ab.	28
79	69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78	13788
80	67 and 79	1092

CDSR, DARE and CENTRAL via Wiley (searched 28 March 2013)

#1	(obes* or overweight or "over weight" or weight gain) and (diet* and exercis* and behav*):ti,ab,kw (Word variations have been searched)	405
#2	(surg* or sibutramine or orlistat or rimonabant):ti,ab,kw	76961
#3	#1 not #2 from 1995 to 2013, in Cochrane Reviews (Reviews only), Other Reviews and Trials	343
#4	#3 from 2009 to 2011, in Cochrane Reviews (Reviews and Protocols), Other Reviews and Trials	117
#5	#3 not #4	226
#6	(weight near/3 intervention*) .ti,ab,kw	17
#7	(weight near/3 program*) .ti,ab,kw	4
#8	(weight near/3 service*) .ti,ab,kw	0
#9	("Weight Watchers" or weightwatchers or "slimming world" or slimmingworld or lighterlife or "lighter life" or "rosemary conley" or rosemaryconley or "jenny craig" or jennycraig) .ti,ab,kw	1
#10	(weight near/3 (group* or organi?ation or initiative* or scheme* or project*)) .ti,ab,kw	22
#11	(slim* near/1 (world or organisation or organization or group or club)) .ti,ab,kw	0
#12	#6 or #7 or #8 or #9 or #10 or #11	37
#13	#5 and #12	0

Ovid MEDLINE in Process (searched 28 Mar. 13)

Same strategy as used for MEDLINE, no results.

Science Citation Index Expanded, 1945-present; Social Sciences Citation Index (SSCI), 1956 – present; Conference Proceedings Citation Index – Science (CPCI-S), 1990-present; Conference Proceedings Citation Index – Social Science and Humanities (CPCI-SSH), 1990-present. All searched via Web of Science, 28 Mar. 13

# 20	**464**	(#19 and #13) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 19	**7,799**	(#14 or #15 or #16 or #17 or #18) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 18	**55**	(TS=(slim* near/1 (world or organisation or organization or group or club))) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 17	**98**	(TS=("weight watchers" or weightwatchers or "slimming world" or slimmingworld or "lighter life" or lighterlife or "rosemary conley" or rosemaryconley or "jenny craig" or jennycraig)) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 16	**554**	(TS=(weight near/3 service*)) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 15	**4,534**	(TS=(weight near/3 program*)) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 14	**3,133**	(TS=(weight near/3 intervention*).) AND Language=(English) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 13	**2,234**	#9 or #10 or #12 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 12	**399**	#11 and #1 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 11	**489**	Topic=(((weight reduc*) SAME (diet and exercise and behav*))) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 10	**475**	Topic=(((weight management or weight maintenance) SAME (diet and exercise and behav*))) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 9	**2,147**	#8 OR #6 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 8	**1,341**	#7 AND #1 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 7	**2,896**	Topic=((diet* and exercis* and behav*)) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 6	**1,756**	#5 AND #1 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 5	**3,343**	#4 AND #3 AND #2 *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 4	**123,940**	Topic=(((exercis* or physical therap*) SAME (scheme* or therapy or therapies or interven* or strateg* or program* or management or maintenance or modif* or reduc*))) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 3	**599,312**	Topic=(((lifestyle or behav*) SAME (scheme* or therapy or therapies or interven* or strateg* or program* or management or maintenance or modif* or reduc*))) *Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28*
# 2	**100,620**	Topic=(((diet) SAME (scheme* or therapy or therapies or interven* or strateg* or program* or management or maintenance or modif* or reduc*)))

Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28

1 **232,228** Topic=((obes* or overweight or "over weight" or weight gain*))
Databases=SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH Timespan=1995-01-01 - 2013-03-28

PsycINFO via OVID 1806 to March Week 3 2013 (searched 28.3.13)

1	(obes* or overweight or "over weight" or "weight gain").ti,ab.	27590
2	Obesity/	13648
3	Overweight/	2211
4	2 or 3	14354
5	1 or 4	28274
6	(diet* and exercis* and behav*).ti,ab.	1501
7	Diets/	8212
8	Exercise/ or Aerobic Exercise/ or Weightlifting/ or Yoga/ or (Physical Activity/ or Exercise/) (including related terms)	11063
9	Behavior/	19675
10	Behavior Change/	8780
11	Behavior Modification/	9863
12	Behavior Therapy/	12036
13	Biofeedback Training/	2476
14	Classroom Behavior Modification/	2394
15	Contingency Management/	1680
16	"Fading (Conditioning)"/	174
17	Omission Training/	32
18	Overcorrection/	51
19	Self Management/	4015
20	Time Out/	243
21	Aversion Therapy/	554
22	Conversion Therapy/	60
23	Exposure Therapy/	1314
24	Implosive Therapy/	416
25	Reciprocal Inhibition Therapy/	91
26	"Response Cost"/	77

27	Systematic Desensitization Therapy/	1742
28	Behaviorism/	3091
29	or/9-28	65726
30	Cognitive Behavior Therapy/	9516
31	29 or 30	74528
32	7 and 8 and 31	37
33	5 and 32	13
34	1 and 6	467
35	33 or 34	473
36	(multicomponent or "multi component").ti,ab.	1827
37	5 and 36	90
38	(("weight maintenance" or maintenance) adj3 weight loss*).ti,ab.	420
39	5 and 38	334
40	(program* or strateg* or intervention* or scheme* or pathway*).ti,ab.	615633
41	39 and 40	216
42	35 or 37 or 41	753
43	limit 42 to (english language and yr="1995 -Current")	611
44	(weight adj3 intervention*).ab,ti.	743
45	(weight adj3 program*).ab,ti.	1537
46	(weight adj3 service*).ab,ti.	32
47	("weight watchers" or weightwatchers or "slimming world" or slimmingworld or "lighter life" or lighterlife or "rosemary conley" or rosemaryconley or "jenny craig" or jennycraig).ti,ab.	36
48	(Weight adj3 (group* or organi?ation or initiative* or scheme* or project*)).ti,ab.	1282
49	(slim* adj1 (world or organisation or organization or group or club)).ti,ab.	10
50	44 or 45 or 46 or 47 or 48 or 49	3244
51	**43 and 50**	**207**

Embase via OVID 1988 to 2013 week 12 (searched 28.3.13)

1	morbid obesity/ or abdominal obesity/ or diabetic obesity/ or metabolic syndrome X/	53170
2	weight gain/	55663

3	(overweight or over weight or overeat* or over eat* or overfeed* or over feed*).ti,ab.	45302
4	(weight adj1 gain*).ti,ab.	44845
5	obes*.ti,ab.	185874
6	or/1-5	284290
7	(modific* or therap* or intervention* or strateg* or program* or management or scheme* or group* or pathway*).ti,ab.	6002528
8	morbid obesity/ or abdominal obesity/ or diabetic obesity/ or metabolic syndrome X/	53170
9	weight gain/	55663
10	(overweight or over weight or overeat* or over eat* or overfeed* or over feed*).ti,ab.	45302
11	(weight adj1 gain*).ti,ab.	44845
12	obes*.ti,ab.	185874
13	or/8-12	284290
14	(modific* or therap* or intervention* or strateg* or program* or management or scheme* or group* or pathway*).ti,ab.	6002528
15	(weight adj1 los*).ti,ab.	63461
16	(weight adj1 reduc*).ti,ab.	10125
17	weight reduction/	81384
18	14 and (15 or 16 or 17)	55763
19	obesity/dm, pc, th	19771
20	Obesity, Morbid/dm, pc, th	740
21	14 and (19 or 20)	12056
22	Diet Therapy/	32342
23	low calory diet/	4892
24	low fat diet/	6003
25	diet restriction/	48570
26	caloric restriction/	7869
27	Dietetics/ or Dietetics Education/	3306
28	(diet or diets or dieting).ti,ab.	220086
29	(low calorie or hypocaloric or calorie control*).ti,ab.	3577
30	(health* adj1 eating).ti,ab.	3519

31	(diet* adj2 (modific* or therapy or intervention* or strateg* or program* or management or scheme*)).ti,ab.	17525
32	(nutrition adj2 (modific* or therapy or intervention* or strateg* or program* or management or scheme*)).ti,ab.	6181
33	(Weight Watchers or weightwatchers).ti,ab.	98
34	(slimming world or slimmingworld).ti,ab.	23
35	(lighterlife or "lighter life").ti,ab.	34
36	or/22-35	299061
37	14 and 36	162826
38	exp exercise/	152776
39	exp kinesiotherapy/	35123
40	(exercise and (therapy or therapies or activity or activities or class* or program* or group* or session* or scheme*)).ti,ab.	100303
41	(Gym and (trainer* or therap* or activit* or class* or program* or group* or session* or scheme* or club*)).ti,ab.	458
42	(walk* or step* or jog* or run*).ti,ab.	614368
43	(aerobic* or physical therap* or physical activit*).ti,ab.	124883
44	(fitness adj (class or regime* or program* or group* or session* or scheme*)).ti,ab.	622
45	(reduc* adj2 sedentary behavio?r).ti,ab.	116
46	(dance and (therap* or activit* or class* or program* or group* or session* or scheme*)).ti,ab.	1461
47	personal trainer*.ti,ab.	79
48	(gym or gyms or gymnasium).ti,ab.	1470
49	or/38-48	879559
50	14 and (38 or 39 or 42 or 43)	385155
51	40 or 41 or 44 or 45 or 46 or 47 or 48 or 50	428030
52	cognitive therapy/	29459
53	Counseling/ or nutritional counseling/ or patient counseling/ or patient guidance/	58349
54	behavior therapy/	29273
55	cognitive behavio?r* therapy.ti,ab.	9371
56	behavio?ral intervention*.ti,ab.	5564

57	(change* adj2 lifestyle*).ti,ab.	7108
58	(changing adj2 lifestyle*).ti,ab.	355
59	(lifestyle adj2 modif*).ti,ab.	5046
60	Hypnosis/	7886
61	hypnosis.ti,ab.	4368
62	(counseling or counselling).ti,ab.	61388
63	or/52-62	157645
64	18 or 21	62000
65	Antiobesity Agent/	2994
66	(sibutramine or orlistat or rimonabant).mp.	9843
67	exp bariatric surgery/	13252
68	exp obesity/su	11070
69	or/65-68	28689
70	13 and 36	59520
71	13 and 37	37288
72	13 and 49	38509
73	13 and 51	27108
74	13 and 63	11021
75	70 and 72 and 74	2648
76	70 and 72	13625
77	70 and 74	4250
78	72 and 74	4587
79	76 or 77 or 78	17166
80	71 and 73	10355
81	71 and 74	3670
82	73 and 74	4061
83	80 or 81 or 82	13338
84	75 or 79 or 83	17166
85	84 not 69	15226

86	limit 85 to (human and english language)	11668
87	limit 86 to embase	9114
88	limit 87 to (infant <to one year> or child <unspecified age> or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>)	1574
89	87 not 88	7540
90	limit 89 to dd=19950101-20132803	7112
91	(weight adj3 intervention*).ab,ti.	2848
92	(weight adj3 program*).ab,ti.	4104
93	(weight adj3 service*).ab,ti.	168
94	("weight watchers" or weightwatchers or "slimming world" or slimmingworld or "lighter life" or lighterlife or "rosemary conley" or rosemaryconley or "jenny craig" or jennycraig).ti,ab.	153
95	(Weight adj3 (group* or organi?ation or initiative* or scheme* or project*)).ti,ab.	11443
96	(slim* adj1 (world or organisation or organization or group or club)).ti,ab.	41
97	or/91-96	17488
98	**97 and 90**	**953**

HTA via CRD, searched 2.4.13

1	(((obes* OR overweight OR "over weight" OR "weight gain"))) IN HTA	210
2	MeSH DESCRIPTOR Obesity EXPLODE ALL TREES	547
3	MeSH DESCRIPTOR Obesity, morbid EXPLODE ALL TREES	129
4	#1 OR #2 OR #3	620
5	(diet* AND exercis* AND behav*) IN HTA	17
6	(diet* AND physical AND behav*) IN HTA	19
7	MeSH DESCRIPTOR diet therapy EXPLODE ALL TREES	150
8	MeSH DESCRIPTOR exercise EXPLODE ALL TREES	637
9	MeSH DESCRIPTOR behavior therapy EXPLODE ALL TREES	891
10	MeSH DESCRIPTOR cognitive therapy EXPLODE ALL TREES	510
11	#9 OR #10	891
12	#7 AND #8 AND #11	12
13	#5 OR #6 OR #12	37
14	#4 AND #13	28
15	(((surgery OR surgical OR hypertension OR diabetes OR sibutramine OR orlistat OR rimonabant))) IN HTA	2562
16	#14 NOT #15	14
17	(((child* OR adolesc* OR teenage* OR youth*))) IN HTA	904
18	#16 NOT #17	12

ASSIA via ProQuest 2.4.13

Line	Terms	Hits
S26	18 and 25	48°

S25	Or/19-24	665°
S24	(slim* NEAR/1 (world OR organisation OR organization OR group OR club))	5°
S23	(Weight NEAR/3 (group* OR organi?ation OR initiative* OR scheme* OR project*))	262°
S22	("weight watchers" OR weightwatchers OR "slimming world" OR slimmingworld OR "lighter life" OR lighterlife OR "rosemary conley" OR rosemaryconley OR "jenny craig" OR jennycraig)	6°
S21	(weight NEAR/3 service*)	34°
S20	(weight NEAR/3 program*)	255°
S19	(weight NEAR/3 intervention*)	238°
S18	16 and 17	226°
S17	yr(1995-2013)	442744*
S16	14 not 15	226°
S15	(((surgery OR surgical OR hypertension OR diabetes OR sibutramine OR orlistat OR rimonabant)))	11126*
S14	4 and 13	269°
S13	5 or 6 or 12	811°
S12	7 and 8 and 11	1°
S11	9 or 10	3336°
S10	SU.EXACT.EXPLODE("Brief cognitive therapy" OR "Cognitive analytic therapy" OR "Cognitive therapy")	396°
S9	SU.EXACT.EXPLODE("Behaviour modification") OR SU.EXACT.EXPLODE("Behaviour management") OR SU.EXACT.EXPLODE("Aversion therapy" OR "Behaviour therapy" OR "Cognitive behaviour therapy" OR "Contingency contracts" OR "Covert sensitization" OR "Habit reversal" OR "Implosive therapy" OR "Interruption prompting" OR "Selfreevaluation therapy" OR "Stimulus control" OR "Stress inoculation training" OR "Subconscious retraining" OR "Verbal satiation")	2977°
S8	SU.EXACT("Physiotherapy") OR SU.EXACT.EXPLODE("Dance exercise") OR SU.EXACT.EXPLODE("Water exercise") OR SU.EXACT.EXPLODE("Exercise therapy") OR SU.EXACT.EXPLODE("Structured exercise") OR SU.EXACT.EXPLODE("Aerobic exercise" OR "Dance exercise" OR "Exercise" OR "Fitness training" OR "Structured exercise" OR "Water exercise" OR "Weight training" OR "Weightlifting" OR "Yoga") OR SU.EXACT.EXPLODE("Aerobic exercise")	3335°

S7	SU.EXACT.EXPLODE("Dieting") OR SU.EXACT.EXPLODE("Diet" OR "High fat diet" OR "Low fat diet")	1517°
S6	(diet* AND physical AND behav*)	585°
S5	(diet* AND exercis* AND behav*)	406°
S4	1 or 2 or 3	4764*
S3	SU.EXACT("Obese women") OR SU.EXACT("Obesity") OR SU.EXACT.EXPLODE("Obese people")	2461°
S2	SU.EXACT.EXPLODE("Obese people")	176°
S1	(((obes* OR overweight OR "over weight" OR "weight gain")))	4637*

Sociological Abstracts via ProQuest 2.4.13

Same strategy as ASSIA, 19 hits

REFMAN searches

Within the Reference Manager database containing all results from the above database searches, we ran individual searches for questions 3, 5, and 6, using Reference Manager functionality. These are outlined below.

Question 3

OR	All non-indexed text fields	attitude*
OR	All non-indexed text fields	experience
OR	All non-indexed text fields	experiences
OR	All non-indexed text fields	qualitative
OR	All non-indexed text fields	prefer*
OR	All non-indexed text fields	feel*
OR	All non-indexed text fields	felt
OR	All non-indexed text fields	opinion*
OR	All non-indexed text fields	inclination*
OR	All non-indexed text fields	"mind set"
OR	All non-indexed text fields	"mind sets"
OR	All non-indexed text fields	perspective*
OR	All non-indexed text fields	"point of view"
OR	All non-indexed text fields	"points of view"
OR	All non-indexed text fields	standpoint*
OR	All non-indexed text fields	culture*
OR	Keywords	qualitative
OR	Keywords	attitude*
OR	Keywords	perception?
OR	Keywords	culture*

Question 5

Operator	Field	Term
OR	All non-indexed text terms	commission*

OR	All non-indexed text terms	organi?e?
OR	All non-indexed text terms	organi?ation*
OR	All non-indexed text terms	provision
OR	All non-indexed text terms	provid*
OR	All non-indexed text terms	distrib*
OR	All non-indexed text terms	avail*
OR	All non-indexed text terms	challenge?
OR	All non-indexed text terms	barrier?
OR	All non-indexed text terms	facilitat*
OR	All non-indexed text terms	implement*
OR	All non-indexed text terms	hinder*
OR	All non-indexed text terms	hindrance*
OR	All non-indexed text terms	deliver*
OR	All non-indexed text terms	obstacle*
OR	Keywords	Health services needs and demand
OR	Keywords	Delivery of health care/sn
OR	Keywords	Delivery of health care/mt
OR	Keywords	Attitudes of health personnel
OR	Keywords	Health services accessibility
OR	Keywords	Regional health planning
OR	Keywords	Community health planning
NOT	User Def 2	EXCL

Question 6

	Field	**Parameter**
1	All non-indexed text fields	((general) OR (family)) AND ((practice*) OR (practitioner*) OR (physician* or doctor*))
2	All non-indexed text fields	GP*
3	Keywords	Primary health care
4	Keywords	General practice
5	Keywords	General practitioner
6	All non-indexed text fields	primary AND (health or care)
7	Keywords	Family practice
8	Keywords	Physicians, primary care
9	All non-indexed text fields	(walk-in) OR (walk in)
10	All non-indexed text fields	community health
11	All non-indexed text fields	(refer?) or (referral) or (referring) or (referred) or (prescri*) or (recommend*) or (advise?)
12	Keywords	referral and consultation
13	User def 2	EXCL
Final list = (or/1-10) AND (11 or 12) NOT 13		

Appendix 3. References excluded after full text screening, listed by primary reason for exclusion[8]

Not UK

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Baldwin AS, Rothman AJ, Jeffery RW. Satisfaction with weight loss: Examining the longitudinal covariation between people's weight-loss-related outcomes and experiences and their satisfaction. [References]. Annals of Behavioral Medicine 2009 Dec;(3):213-24.

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Clark D, Chrysler L, Perkins A, Keith NR, Willis DR, Abernathy G, et al. Screening, referral, and participation in a weight management program implemented in five CHCs. Journal of Health Care for the Poor & Underserved 2010 May;21(2):617-28.

Cowan R, Britton PJ, Logue E, Smucker W, Milo L. The relationship among the transtheoretical model of behavioral change, psychological distress, and diet attitudes in obesity: Implications for primary care intervention. Journal of Clinical Psychology in Medical Settings 1995;2(3):249-67.

Fontaine KR, Cheskin LJ, Allison DB. Predicting treatment attendance and weight loss: assessing the psychometric properties and predictive validity of the Dieting Readiness Test. Journal of Personality Assessment 1997 Feb;68(1):173-83.

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[8] Note, some references were screened for inclusion in more than one question

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Kaim MC. Barriers to intentional weight loss in the elderly. US: Yeshiva U; 1996.

LaRose JG, Fava JL, Wing RR. Developing weight loss programs for young adults: Do men and women want different things? Obesity Conference: 29th Annual Scientific Meeting of the Obesity Society, Obesity 2011 Orlando, FL United States Conference Start: 20111001 Conference End: 20111005 Conference Publication: (var pagings) 2011;19(pp S184):November.

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Shiffman S, Sweeney CT, Pillitteri JL, Sembower MA, Harkins AM, Wadden TA. Weight management advice: What do doctors recommend to their patients? [References]. Preventive Medicine: An International Journal Devoted to Practice and Theory 2009 Dec;(6):482-6.

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Not a study

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NHS Kirklees Doc 1. 2013. Ref Type: Unpublished Work

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Scope not relevant to any questions

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Pallister C, Avery A, Stubbs J, Lavin J. Influence of Slimming World's lifestyle programme on diet, activity behaviour and health of participants and their families. Journal of Human Nutrition and Dietetics 2009;22(4):351-8.

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Price JH, Desmond SM, Krol RA, Snyder FF, O'Connell JK. Family practice physicians' beliefs, attitudes, and practices regarding obesity. American Journal of Preventive Medicine 1987 Nov;3(6):339-45.

Abstract only/insufficient detail

Donnachie C, Hunt K, Gray C, Mutrie N, Wyke S. Which men can increase physical activity & lose weight after a gender-sensitive intervention delivered in a male-friendly setting? Journal of Science and Medicine in Sport Conference: Be Active 2012 Sydney, NSW Australia Conference Start: 20121031 Conference End: 20121103 Conference Publication: (var pagings) 2012;15(pp S305):December.

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Heald A, Amlesh J, Walmsley R, Stocker J, Dickinson M, Anderson S. Structured implementation of lifestyle intervention in primary care delivers slimmer people and glucose reduction. Diabetes Conference: 71st Scientific Sessions of the American Diabetes Association San Diego, CA United

States Conference Start: 20110624 Conference End: 20110628 Conference Publication: (var pagings) 2011;60(pp A700-A701):July.

Participants had pre-existing condition

British Polio Doc 2. 2013.

British Polio. 2013.

Participants not overweight/obese

Chambers JA, Swanson V. Stories of weight management: factors associated with successful and unsuccessful weight maintenance. British Journal of Health Psychology 2012 May;17(2):223-43.

Participants not adults

Turner S. Promoting healthy lifestyles for people with learning disabilities: A survey of provider organisations. British Journal of Learning Disabilities 1996;(4):138-44.

Programme not a BWMP

Stubbs J, Pallister C, Avery A, Allan J, Lavin J. Weight, body mass index and behaviour change in a commercially run lifestyle programme for young people. Journal of Human Nutrition and Dietetics 2012;25(2):161-6.

Appendix 4. Evidence tables

Table 14: Evidence Tables showing 26 of 25 studies

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Ahern et al 2013 **Citation** Ahern A, Boyland E, Jebb S and Cohn S. Participants' explanatory model of being overweight and their experience of standard primary care compared with a commercial weight loss intervention (Unpublished) **Study design** Qualitative **Quality score** ++ **External validity score** ++ **Contributes to: Users**	**What was/were the research questions:** Explore accounts of UK participants' experiences of two weight-loss interventions (Jebb 2011). **What theoretical approach:** NS **How were the data collected:** - **What method (s):** Semi-structured telephone interview - **By whom:** researcher - **What setting(s):** telephone - **When:** within 6 months of completing a 12 months intervention.	**Description of programme:** Two interventions: **Commercial Programme** Vouchers to attend Weight Watchers for 12 months Weekly group meetings in local community venue - promotes a hypoenergetic, balanced diet based on healthy eating principles - advice on increasing physical activity - weight measurement - group support - internet monitoring and community boards **Standard Programme** In line with national guidelines Weight loss advice from primary care professional at local practice (usually practice nurse) - 1 to 1 meetings; Minimum level of care 6 visits over 12 months - Weight measurement - Dietary advice based on British Heart Foundation booklet **Description of study participants:** 16 female participants (9 from commercial programme and 7 from standard care) **What population were the sample recruited from:** From the UK, 120 took part in the commercial programme and 116 in the standard care arm. **How were they recruited:** "Sample was purposefully sampled to represent both intervention groups according to basic descriptive variables and to ensure we had respondents from each participating practice". **Were there specific exclusion criteria:** NS	**Brief description of method and process of analysis:** Participants completed a semi-structured telephone interview. "An iterative thematic analysis was conducted following an initial and relatively open interpretive framework derived from the topic guide". **Key themes relevant to this review:** ***'Users' themes*** Benefits of commercial: regular contact, motivation, feeling obligated, being weighed by someone else, good motivating leader, per support and peer pressure. Benefits of GP: privacy, flexible, free. Barriers to commercial: public, money driven. Barriers to GP: limited time and availability, patient led.	**Limitations identified by author:** Small sample from only one of the countries participating in the original trial. It is possible telephone interviews may have influenced and restricted responses. **Limitations identified by review team**: Relatively small sample **Source of funding:** Medical Research Council (Original trial funded by Weight Watchers International) **Any reasons for downgrading (internal or external validity)** NA **Other notes**

		Were there specific inclusion criteria: NS		

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Allan et al. 2011 **Citation** Allan, K., Hoddinott, P. and Avenell, A. (2011), A qualitative study comparing commercial and health service weight loss groups, classes and clubs. Journal of Human Nutrition and Dietetics, 24: 23–31. **Study design** Qualitative **Quality score ++ External validity score ++ Contributes to: Users, Services**	**What was/were the research questions:** Compare and contrast leader's and attendee's experiences of health service and commercial weight-loss groups through in-depth interviews and group observations **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Semi-structured group observations and in depth interviews - **By whom:** Researcher - **What setting(s):** Face-to-face and telephone - **When:** NR	**Description of programme:** Health service and commercial weight loss groups with diverse characteristics and processes, serving inner city, town and rural populations with a range of socioeconomic profiles in Scotland. All except one of five commercial organisations and their group leaders agreed to participate. A lay-initiated group was included as a deviant case and to search for differing perspectives. **Description of study participants:** Six commercial groups, six health service groups and one community group. From these interviews with group leaders (n = 11) and participants (n = 22). **What population were the sample recruited from:** NR **How were they recruited:** Participants were selected using a sampling frame to ensure maximum variation in gender, age, variety of groups attended, length of attendance and degree of being overweight. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** The researchers developed a semi-structured interview topic guide and group observation tool. Five group attendees chose a telephone interview and all others were face-to-face. Audio-recorded interviews lasted 30–80 min. The researchers independently reviewed five early transcripts to identify initial themes and agree a coding index **Key themes relevant to this review:** ***'Users' themes*** Commercial groups: leaders share personal experiences, larger on going groups, reliable branded package, flexible attendance. Health service groups: smaller, fixed term groups, less flexible, few options for continuing attendance. Benefits – weigh in as motivator. ***Q5 themes***	**Limitations identified by author:** The present study may not be representative of other countries or health care systems. Ethnic minorities and younger adults were under-represented and one large commercial organisation did not wish to participate **Limitations identified by review team**: **Source of funding:** Medical Research Council (Original trial funded by Weight Watchers International) **Any reasons for downgrading (internal or external validity)** NA **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Anon (2012). **Citation:** Anon (2012). A qualitative study of service user and referrer experience of the North Somerset Slimming On Referral scheme. Student report **Quality score ++** **External validity score ++** **Contributes to:** Users and Referral	**What was/were the research questions:** To evaluate the experience of clinicians referring to and service users who received vouchers for Slimming on referral. **What theoretical approach:** Grounded theory **How were the data collected:** - **What method (s):** Semi-structured telephone interviews. - **By whom:** Researcher - **What setting(s):** Telephone - **When:** NR	**Description of programme:** Weight watchers and Slimming world **Description of study participants:** Clinicians: No responses Service users: Five responses, 80% female. Two attended weight watchers and three attended Slimming world **What population were the sample recruited from:** **Clinicians** Purposive sampling framework: **a)** One clinician from each of the following groups - GPs, practice nurses and healthcare assistants; **b)** One clinician who used the pilot SOR scheme and one who used the new scheme; **c)** One clinician who referred more than 3 individuals (the average number of referrals per clinician) and one who referred fewer. **Service users** Sampling framework to maximise the variety of experiences of participants: **a)** One patient referred into the pilot and one referred into the new scheme; **b)** One completer and one non-completer (see Appendix 1 for glossary); **c)** One patient attending WW and one attending SW. **How were they recruited:** **Clinicians:** All 149 clinicians who had referred patients to the service were invited. **Service users:** Those referred to the service between August 2011 and January 2012 (n=374) and all service users referred to the pilot scheme between January and August 2011 (n=387). Initially, 99 service users were mailed (50 new scheme and 49 pilot scheme), a further 25 new scheme service users were mailed **Were there specific exclusion criteria:** NR	**Brief description of method and process of analysis:** Semi-structured telephone interviews (14-23 minutes). Coded and organised into domains. Themes were extracted from the domains. **Key themes relevant to this review:** ***'Users' themes*** • Barriers to attendance – cost • Leader styles important • Groups support good • Weigh ins good	**Limitations identified by author:** Limited by lack of clinician responses. Also, all service users engaged with the service and felt they had successfully lost weight. To note: The evaluator is also the commissioner of SOR, with views about the service formed by this experience. **Limitations identified by review team**: Limited sample size and only on researcher coded the themes. **Source of funding:** NR

		Were there specific inclusion criteria: NR		

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Bidgood and Buckroyd 2005 **Citation** Bidgood, J. and Buckroyd, J. (2005). An exploration of obese adults' experience of attempting to lose weight and to maintain a reduced weight. Counselling and Psychotherapy Research, 5(3): 221-229. **Study design** Qualitative **Quality score ++ External validity score +** **Contributes to:** Users	**What was/were the research questions:** Exploring obese people's accounts of their experiences and feelings during their attempts to lose weight and to maintain a reduced weight. **What theoretical approach:** Grounded theory **How were the data collected:** - **What method (s):** One to one interviews and focus groups - **By whom:** Researcher - **What setting(s):** Face-to-face - **When:** NR	**Description of programme:** No specific weight-loss programme is described. Participants' talk of their experiences during attempts to lose weight. **Description of study participants:** There were 18 participants: 2 men and 11 women with BMIs>30 but <40 and 5 women with BMIs>40 but <50 **What population were the sample recruited from:** General public **How were they recruited:** Advertising in local press, personal contact, flyers in libraries, shops, supermarkets etc. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: Aged 18 or over with a Body Mass Index (BMI) $\geq$ 30	**Brief description of method and process of analysis:** Eight of the participants were interviewed on a one-to-one basis (1hr) and the remaining ten formed two focus groups (2hrs). Interviews and focus group meetings were semi-structured. A systematic search was used to identify similarities and differences between the responses of the participants. Thematic analysis identified underlying themes. The process used was similar to the grounded theory approach to qualitative research. **Key themes relevant to this review:** ***'Users'*** • Need on going help. • Stigma is a barrier to change. • Group meetings helpful but not individualised or in depth.	**Limitations identified by author:** NR **Limitations identified by review team**: NR **Source of funding:** NR **Any reasons for downgrading (internal or external validity)** Unclear how representative of the obese population this sample is **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Campaign Company 2008 **Citation** The Campaign Company and Kirklees Partnership. Social Marketing Insight into Obesity – The Health Practitioner's Perspective: Report. April 2008. **Study design** Qualitative **Quality score** + **External validity score** - **Contributes to question(s)** services and referral	**What was/were the research questions:** Experience of health professionals directly involved in working with overweight patients in primary care, secondary care, and broader community settings. Commissioned to inform development of social marketing approaches to tackle obesity. **What theoretical approach:** NS **How were the data collected:** - **What method (s):** depth interviews (13) and facilitated discussion groups (7) - **By whom:** researcher - **What setting(s):** majority primary care, some secondary care (findings from secondary care not reported here) - **When:** NS	**Description of programme:** n/a. Some provision of Counterweight, a BWMP delivered via primary care. **Description of study participants:** GPs, practice nurses, practice staff, health visitors, pharmacists, dietitians, occupational therapists, physiotherapist, specialist consultants. (Note, evidence reported in this review focuses on GPs, practice nurses, and practice staff.) No other description given, n NS. **What population were the sample recruited from:** Health care providers in Kirklees, West Yorkshire. 1 in 5 of adult population in Kirklees classed as obese. No further detail provided. **How were they recruited:** NS **Were there specific exclusion criteria:** NS **Were there specific inclusion criteria:** NS	**Brief description of method and process of analysis:** NS **Key themes relevant to this review:** ***Services*** *Facilitators:* • Obesity seen to be a priority • 'Partnership-working' – recommends formation of Network with primary care, secondary care, local authority and third sector representatives • Generally primary care providers felt confident about raising and tackling obesity as an issue • BMI as tool – tangible way of expressing concern *Barriers:* • Difficult to motivate patients to take sustained action • Insufficient training in motivational techniques • Insufficient information on weight management solutions for health practitioners (NICE and DoH guidance not sufficient at the time of research) • Perception among health practitioners that health care assistants, health visitors, or community dietitians can be better motivators than GPs or practice nurses • Lack of pressure to deal with obesity systematically at an operational level (e.g. monitoring of patient's care path, follow-up after referral): *"The most difficult step for a patient is taking that first step to tackle their weight problem. It is our responsibility as healthcare professionals to ensure they get the support necessary to ensure they do not drop out of the system at the first excuse. But for that we need*	**Limitations identified by author:** NS **Limitations identified by review team**: Report run to inform social marketing campaign, some content too general and not relevant to this review. Methods very sparsely reported. **Source of funding:** Kirklees Partnership **Any reasons for downgrading** Quality score downgraded due to insufficient reporting of methods around sampling, data collection, and analysis. External validity score downgraded as unclear if eligible population representative of source population and unclear if selected participants represent eligible population.

			a clear system in the first place." • Primary care providers who felt insecure about their own weight were not confident raising the issue with patients • Difficulty with some issues unique to Asian community, especially Asian women (often not key decision-makers in family, "frowned upon" if exercise alone) • Limited awareness about what services exist • Process and programmes difficult for people to access and understand • Insufficient internal enforcement • Lack of formal mechanism for referring to commercial weight management programmes ***Referral*** **Raising issue:** • Relatively easy to raise the issue of weight management, calculate BP or BMI together helps, confidence is high, more of a problem for HPs who have weight issues, different BMI cut offs used, different language used – obese, a little bit overweight. • Difficulties of dealing with Asian families – different foods, role of women, language • PN raise issue with all, GPs only if having impact on health **Taking action:** • Feeling that health care assistants, health visitors and community dieticians are better motivators than GPs or practice nurses	
Study details	**Research parameters**	**Programme, population and**	**Outcomes and methods of analysis/Results**	**Notes**

		sample selection		
Author and year Counterweight Project team 2008 **Citation** Counterweight Project Team, McQuigg, M., Brown, J.E., Broom, J.I., Laws, R.A., Reckless, J.P., Noble, P.A., Kumar, S., McCombie, E.L., Lean, M.E., Lyons, G.F., Mongia, S., Frost, G.S., Quinn, M.F., Barth, J.H., Haynes, S.M., Finer, N., Haslam, D.W., Ross, H.M., Hole, D.J., & Radziwonik, S. 2008. Engaging patients, clinicians and health funders in weight management: the Counterweight Programme. Family Practice, 25, Suppl-86 **Study design** Qualitative **Quality score** ++ **External validity score** ++ **Contributes to questions** users and services	**What was/were the research questions:** What are the key barriers and facilitators to patient and staff engagement with Counterweight delivered via primary care? **What theoretical approach:** NS **How were the data collected:** - **What method (s):** focus groups and one-to-one interviews, in person - **By whom:** researcher - **What setting(s):** NS but presumably in practices - **When:** NS	**Description of programme:** Counterweight programme, delivered in primary care; aims to raise awareness of barriers to obesity management and to change team behaviour **Description of study participants:** 7 GPs, 15 practice nurses, 37 patients (representing 11 practices). Authors report efforts to recruit a representative sample, but do not report on the characteristics of recruited individuals. **What population were the sample recruited from:** Practices which agreed to implement Counterweight as part of a pilot project; "care was taken to provide a representative group of practices based on key practice characteristics" **How were they recruited:** Practices purposefully sampled based on key characteristics and extent to	**Brief description of method and process of analysis:** Focus groups and one-to-one interviews with patients and staff from primary care practices that had implemented Counterweight to varying degrees of success. Analysed through coding themes and issues in verbatim transcripts. **Key themes relevant to this review:** ***Users*** • Patient engagement due to: endorsement of programme by medical practice, free, referral, rapport with staff, positive messages, • Barriers: lack of commitment, low self-efficacy, poor GP involvement, the term 'obese' • On-going engagement: clear understanding of goals of programme, clear sense of structure, personalised approach, positive outcomes, proactive follow up • No on-going engagement: unclear expectations, no success, lack of strategies to deal with relapse, no active follow up ***Services*** *Key themes related to engaging practice staff:* • Clinicians' beliefs and attitudes • Programme initiation and implementation • Programme context and organizational/contextual factors *Key barriers:* • Clinicians' belief that primary care was not an appropriate setting for weight management	**Limitations identified by author:** Sample did not include practices that refused to participate in Counterweight, and individuals who agreed to be interviewed may have felt more positive about the programme than those who refused. **Limitations identified by review team**: Relatively small samples, especially of GPs. **Source of funding:** Roche Products Ltd. **Any reasons for downgrading (internal or external validity)** NA **Other notes**

		which they had been successful in implementing Counterweight. Patients recruited via letter. **Were there specific exclusion criteria:** NS **Were there specific inclusion criteria:** NS	• Scepticism about effectiveness of managing obesity within primary care • Practice nurses responsible for implementing programme not involved in decision to sign up to programme • Lack of confidence re: implementing programme with patients • Perception programme too time and resource intensive given no incentives *Key facilitators:* • Active GP participation • Strong GP ownership of programme, with members of staff acting as 'Counterweight champions' • Experiences of patient success *Suggested strategies:* • Provide evidence of clinical and cost-effectiveness; burden of obesity on practice • Encourage all practice staff to be involved in decision to implement • Identify 'champion' within practice • Provide interactive training; monitor achievement • Advocate for inclusion of weight management in GP contract	

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Epstein 2005 **Citation** Epstein L, O.J. 2005. A qualitative study of GPs' views of treating obesity. British Journal of General Practice, 55, (519) 750-754. **Study design** Qualitative **Quality score** ++ **External validity score** ++ **Contributes to question(s)** services	**What was/were the research questions:** explore GP's views about treating patients with obesity **What theoretical approach:** interpretive phenomenological approach **How were the data collected:** - **What method (s):** semi-structured interviews - **By whom:** researcher - **What setting(s):** NS - **When:** NS	**Description of programme:** n/a **Description of study participants:** 21 GPs. 10 male, 11 female, even age distribution, 15 white, 5 Asian, 1 black African, 16 trained in UK, 3 trained in India, one in Australia and one in Nigeria. **What population were the sample recruited from:** 130 GPs in one inner London primary care trust; 35 offered to be interviewed, limited to two per practice **How were they recruited:** NS **Were there specific exclusion criteria:** Locums and registrars **Were there specific inclusion criteria:** No	**Brief description of method and process of analysis:** transcripts read independently by two researchers, key themes identified and brought together **Key themes relevant to this review:** ***Services*** *Barriers* Summarise barriers as responsibility and efficacy. • GPs primary believed obesity to be responsibility of patient rather than medical problem requiring medical solution • Perceived lack of effective interventions that GPs can deliver or refer to: "It is a very current major problem and yet as primary care providers we are very ineffective and rather powerless." • GPs interpreted patients as believing that obesity was GP's responsibility rather than a personal responsibility: "He was looking to what I was going to do about his weight rather than what he was going to have to do about it"	**Limitations identified by author:** Small sample size limits generalizability of results. Possible views and perceptions of researchers could have influenced responses or data interpretation **Limitations identified by review team**: Doesn't delve very much into feelings re: programmes **Source of funding:** Kings College London **Any reasons for downgrading** n/a

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Gimlin (2007). **Citation:** Gimlin, D (2007). Constructions of ageing and narrative resistance in a commercial slimming group. Ageing and Society, 27, 407-424 **Quality score ++ External validity score +** **Contributes to:** Users	**What was/were the research questions** Focus on the role of organisational setting and age in shaping individuals' narratives of embodied selfhood **What theoretical approach:** Grounded theory **How were the data collected:** Participant-observation over six months in a multi-national weight management corporation's weekly sessions in Aberdeen, Scotland, and from in depth interviews - **What method (s):** Observation and interviews (1 hour) - **By whom:** - **What setting(s):** Premises in the city's central shopping area - **When:**	**Description of programme:** Multi-national weight-management corporation with weekly group sessions. **Description of study participants:** 20 participants were interviewed, all women and all white. Fifteen were aged 55-76 years and five aged 18-25 years. Fourteen had been or were currently employed part- or full-time. Four of the five 18-25 year olds were students. **What population were the sample recruited from:** From '40 or so' women attending a weight management **How were they recruited:** All women attending a weight management class were asked if they wished to take part. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** In-depth interviews (1 hour) were transcribed and, along with observational data, analysed by thematic analysis according to the principles of the 'grounded theory' approach. **Key themes relevant to this review:** ***'Users' themes*** • Motivated by health and appearance-older people not supposed to be motivated by appearance. • Weigh in causes anxiety. • Group provides support and celebration of success.	**Limitations identified by author:** This study was limited by the small sample size and its focus on a single weight-loss setting. **Limitations identified by review team**: Small sample size that may not be representative **Source of funding:** NR **Any reasons for downgrading (internal or external validity)** The eligible population was not representative of the source. **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: Gray et al. (2013) **Citation:** Gray, CM Hunt, K. Mutrie, N. Anderson, AS. Leishman, J. Dalgamo, L. Wyke, S (2013). Football Fans in Training: the development and optimization of an intervention delivered through professional sports clubs to help men lose weight, become more active and adopt healthier eating habits BMC Public Health, 13:232 **Quality score:** ++ **External validity score:** ++ **Contributes to:** Users	**What was/were the research questions:** To describe the development and optimization of the Football Fans in Training (FFIT) programme. **What theoretical approach:** Framework approach **How were the data collected:** - **What method (s):** Open feedback forms, semi structured focus groups and interviews - **By whom:** Researchers - **What setting(s):** Telephone - **When:** Last 3rd of the 12 week programme.	**Description of programme:** Football Fans in Training (FFIT), for men who are overweight and obese. 12 weeks sessions at football stadia by community coaches trained in diet, nutrition, PA and behaviour change techniques. Focus on PA through an incremental pedometer-based walking program and pitch-side sessions led by club coaches. **Description of study participants:** Feedback forms: 155 (51.2%) of the 303 men who took part. Focus Groups: 26 men who had completed the programme (sampled purposively from a list of volunteers to represent the range of ages and baseline BMIs) Telephone or face-to face interviews: 13 non completers from two clubs in a feasibility trial. **What population were the sample recruited from:** 303 men in Delivery 1 and two clubs ran a feasibility trial (n=NR). **How were they recruited:** Focus groups purposively sampled. All completers asked to fill in a feedback form. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: NR	**Brief description of method and process of analysis**: Feedback forms were read through and a matrix was used to identify occurrences of themes to allow frequency analysis. Semi-structured focus groups and interviews were transcribed, coded and analysed by two researchers. **Key themes relevant to this review:** ***'Users'*** • Enthusiastic about classroom and physical activity components • Benefits – group factors, camaraderie, peer support, banter, age matched groups, all men, • Costs of group – embarrassment of doing exercise in a group, difficult to speak out about personal issues • Useful components – broad lifestyle approach (not just diet), potion sizes, reading labels, eat well plate, simple message, use of visual representation of weight loss using sandbags • Not useful components – needed to get to know each other better, detailed calorie counting, wanted more follow up • Exit reasons – embarrassment of doing exercise in group, letting others down, work commitments, health issues, moving away from area, family commitments ***'Services'*** The coaches felt a major strength of p-FFIT was that the key messages were easy to understand	**Limitations identified by author:** Low response (51.2%) to feedback forms. **Limitations identified by review team**: Details on sample not provided (though reported as representative). **Source of funding:** Chief Scientist Office (CZG/2/504) and SPL Trust. **Any reasons for downgrading (internal or external validity)** **Other notes**

			Some coaches admitted it had been difficult to find sufficient time to read through and assimilate the detailed delivery notes in preparation for each session. GP had been reluctant to support their involvement. The lack of provision of post-programme follow-up was also raised	

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Greener 2010 **Citation** Greener, J. Douglas, F. van, Teijlingen E. 2010, More of the same? Conflicting perspectives of obesity causation and intervention amongst overweight people, health professionals and policy makers, Social Science and Medicine, 70 (7) April **Study design** Qualitative **Quality score** ++ **External validity score** + **Contributes to question(s)** users, services	**What was/were the research questions:** Perceptions of health professionals, policy makers, and overweight individuals about obesity causation and interventions **What theoretical approach:** framework approach **How were the data collected:** - **What method (s):** interviews, face-to-face and phone - **By whom:** researcher - **What setting(s):** 'variety' - **When:** 2006-2007	**Description of programme:** n/a **Description of study participants:** 34 overweight individuals, 20 health professionals (7 practice nurses, 5 dietitians, 4 GPs, 2 health visitors, 1 clinical psychologist, 1 clinical nurse), 9 policy makers (range of UK government and NGOs concerned with weight management, including public health staff, 'primary care leaders'). Further details NS **What population were the sample recruited from:** UK, further details NS **How were they recruited:** Purposive sampling of lay group recruited by contacting people in public places, GP surgeries, dietetic services and weight management groups. Health professional group recruited using purposive sampling across UK. **Were there specific exclusion criteria:** NS **Were there specific inclusion criteria:** Lay people: 18-50 years old, self-identified as being overweight	**Brief description of method and process of analysis:** interviews transcribed verbatim, coded data in thematic charts **Key themes relevant to this review:** ***Users*** • Motivated by health and appearance • Need long term professional support • Group support • AND one to one support • Barriers to weight loss: work, family life, ill health ***Services*** *Barriers:* *(as perceived and reported by health care professionals)* • Beliefs and motivation of individuals • Nature of existing health services and inability to deal effectively with weight management • Common view that people became de-motivated when rate of weight loss slowed • Unrealistic expectations as perceived barrier: "With all of the wonderful stories… Mrs so and so went along to a slimming club, she lost a stone a month and in a year she went from this to this. So they see that's what should happen to me whereas weight loss is a very individual thing." • Lack of health service capacity • Lack of appropriate training in primary care • Perceived their ability to make a difference as very small *(as perceived and reported by policy makers)*	**Limitations identified by author:** People with self-identified weight problem may have different beliefs than other lay groups. Small sample sizes. **Limitations identified by review team**: Not much reported on perceptions of specific programmes, though presumably this would have been discussed during interview. **Source of funding:** National Preventative Research Initiative, Universities of Aberdeen and Melbourne **Any reasons for downgrading** external validity score downgraded due to lack of information with which to judge representativeness of sample

			• Lack of evidence about effective interventions: "There isn't any extremely strong evidence base behind any of the specific interventions." • Did not believe local authorities, the NHS, the national government, education and the private sector well enough connected to respond effectively to problem *Facilitators:* • Health professionals favoured interventions that encouraged behavioural and lifestyle change	

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Herriot et al. (2008) **Citation** Herriot, AM; Thomas, DE; Hart KH; Warren, J; Truby, H (2008), A qualitative investigation of individuals' experiences and expectations before and after completing a trial of commercial weight loss programmes. Journal of Human Nutrition and Dietetics. 21, 72-80 **Study design** Qualitative **Quality score ++** **External validity score ++** **Contributes to:** Users**,**	**What was/were the research questions:** To enhance the understanding of why subjects volunteered to take part in a weight loss trial and also to ascertain their views on each of the diets tested. **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Focus groups - **By whom:** Researcher - **What setting(s):** NR - **When:** Baseline and 6 months (at the end of the intervention)	**Description of programme:** Atkins diet (a low carbohydrate plan), the Weight Watchers Pure Point System (portion controlled healthy eating), the Slimfast Plan (a meal replacement approach) and the Rosemary Conley (low fat diet and exercise plan). **Description of study participants:** 32 participants, 78% female aged 42.3 (10.1) with a BMI of 32kg/m2 (2.5) took part in 6 focus groups at baseline. 14 participants, 86% female took part in 4 focus groups at 6 months. **What population were the sample recruited from:** Drawn from the University of Surrey cohort (n = 59) of the 'Diet Trials' study. There were no statistically significant differences in age or body weight of the subjects and the remainder of the Surrey cohort who did not participate in the focus groups. The focus groups also had a similar ratio of males : females as in the overall study **How were they recruited:** Asked if wanted to take part in a focus group at baseline. Those recruited at 6 months had to have taken part at baseline. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** Focus groups (beginning and end of measurement period). All audio tapes were transcribed and analysed using the classical long table approach. A moderator reviewed the summaries to confirm the analysis. **Key themes relevant to this review:** **'*Users*' themes** • Motivation – health and appearance • Benefits – group support, weigh ins, follow ups. • Diets specific pros and cons: • Pros- easy to follow diets, no special foods, no food banned, eat with family, educational, exercise component. • Cons: foods didn't fit i with family, slim fast boring, anti-social, classes variable. • Wanted – longer term support and follow ups, planning to come off diet.	**Limitations identified by author:** The participants had enrolled on a weight loss study sponsored by the BBC so may be different to other overweight or obese individuals seeking help. **Limitations identified by review team**: Limited sample size. **Source of funding:** **S**ponsored by the BBC. **Any reasons for downgrading (internal or external validity)** NA **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Hindle 2012 **Citation** Hindle L, A Review of Specialist Weight Management Service Outcomes in Birmingham and Solihull to inform the future commissioning of weight management services for Morbid Obesity in Birmingham, February 2012. **Study design** Qualitative and quantitative (programme review) **Quality score** - **External validity score** + **Contributes to question(s)** users and services	**What was/were the research questions:** Review specialist weight management programmes (level 3) as part of review of obesity care pathway in Birmingham; describe and analyse current service provision; obtain views of local clinicians **What theoretical approach:** NS **How were the data collected:** - **What method (s):** focus group and face-to-face interviews with providers (managers and clinicians); service user feedback through focus group and collected by providers as part of routine service monitoring - **By whom:** NS - **What setting(s):** NS - **When:** NS	**Description of programme:** **'**Specialist weight management services' delivered by multidisciplinary teams; range of providers across Birmingham; further details not provided. **Description of study participants:** NS **What population were the sample recruited from:** Providers and patients involved in level 3 weight management services in Birmingham and Solihull. Providers include managers, dieticians, counsellors, and GPs. Cohort of patients is those with most difficultly managing their weight, unsuccessful at level 2 services, not suitable for bariatric surgery, with co-morbidities acting in tandem with obesity on life expectancy and quality of life. **How were they recruited:** NS **Were there specific exclusion criteria:** NS **Were there specific inclusion criteria:** NS	**Brief description of method and process of analysis:** Method of analysis for qualitative data NS. (Quantitative methods reported but data not relevant to this review.) **Key themes relevant to this review:** ***Users*** • Group support is good, good regular feedback • Clearer sense of duration of service • Need realistic expectations • Want personalised approach not texts • Want exercise sessions ***Services*** Actions recommended by clinicians: • Increase clarity regarding referral criteria and discharge procedures • Introduce assessment process to identify people who will most benefit from service • Increase patients' expectations of their responsibilities • Need to demonstrate value for money • Improve integration between specialist weight management services, higher level services, and community diabetes services • Increase contact between patients and providers	**Limitations identified by author:** NS **Limitations identified by review team**: Grey literature source, methods for qualitative elements not reported in detail. **Source of funding:** NS **Any reasons for downgrading** Quality score downgraded due to lack of information on methodology. External validity score downgraded as insufficient information with which to judge representativeness of sample.

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Hoppe 1997 **Citation** Hoppe, R. & Ogden, J. 1997. Practice nurses' beliefs about obesity and weight related interventions in primary care. International Journal of Obesity & Related Metabolic Disorders: Journal of the International Association for the Study of Obesity, 21, (2) 141-146 **Study design** Quantitative **Quality score** ++ **External validity score** ++ **Contributes to question(s)** services	**What was/were the research questions:** Examine practice nurses' beliefs about obesity and their current practices and the role of weight management context and their own BMI on these factors **What theoretical approach:** NS **How were the data collected:** - **What method (s):** cross sectional questionnaires - **By whom:** n/a, posted - **What setting(s):** n/a, posted - **When:** NS	**Description of programme:** n/a **Description of study participants:** 586 practice nurses, mean age 42.3, 49% worked in general practice for less than 5 years, mean BMI 23.5 (SD 3.4), 35.9% BMI > 25 **What population were the sample recruited from:** 900 practices within the UK randomly selected, one practice nurse contacted from each practice **How were they recruited:** (both how they were selected for the interview and, if relevant, how they were selected for the programme in the first place) **Were there specific exclusion criteria:** NS, but presumably no **Were there specific inclusion criteria:** Practice nurse at participating practice	**Brief description of method and process of analysis:** Data analysed using SPSS to test associations between nurses' profile characteristics, beliefs, and actions. Parametric statistics used as data distributed normally. **Key themes relevant to this review:** ***Services*** *Barriers:* • Low expectations of patient compliance and actual weight loss • Failed weight loss explained in terms of personal rather than professional factors • 'Operation was a success but he patient died' approach to obesity management • Practice nurses who ran their own weight loss clinic less likely to refer to a self-help group • Authors speculate practice nurses may appraise their own skills as independent from patient weight loss *Facilitators:* • High levels of confidence in ability to give advice • Regarded weight loss as beneficial and treatable	**Limitations identified by author:** NS **Limitations identified by review team**: Not focussed on views of specific programmes or treatment pathways **Source of funding:** South Thames Regional Health Authority **Any reasons for downgrading** n/a

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: Hunt et al. (2013) **Citation:** Hunt, K. McCann, C. Gray, CM. Mutrie, N. Wyke, S (2013). "You've Got to Walk Before You Run": Positive Evaluations of a Walking Program as Part of a Gender-Sensitized, Weight-Management Program Delivered to Men Through Professional Football Clubs. Health Psychology, Vol 32(1), 57-65 **Quality score: ++ External validity score: +** **Contributes to:** Users	**What was/were the research questions:** To explore men's views of a pedometer-based walking program, part of a weight-management intervention delivered through Scottish Premier League football clubs, and the congruence or challenge this poses to masculine identities **What theoretical approach: NR** **How were the data collected:** - **What method (s):** Semi-structured interview - **By whom:** Researchers - **What setting(s):** Telephone - **When:** Last 3rd of the 12 week programme.	**Description of programme:** Football Fans in Training (FFIT), for men who are overweight and obese. 12 weeks sessions at football stadia by community coaches trained in diet, nutrition, PA and behaviour change techniques. Focus on PA through an incremental pedometer-based walking program and pitch-side sessions led by club coaches. **Description of study participants:** 27 participants, 100% men. **What population were the sample recruited from:** 355 men (aged 35–65 years, average BMI 34.5 kg/m^2) from a wide range of backgrounds (roughly equal proportions from the five quintiles of socioeconomic deprivation) were enrolled on FFIT in September 2010. Men participating at three clubs were invited and 31 men approached. **How were they recruited:** NR **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: NR	**Brief description of method and process of analysis**: Semi-structured telephone interviews were coded and analysed by two researchers. **Key themes relevant to this review:** ***'Users' themes*** • Gender sensitive – matched to men's needs. • Liked location at football clubs. • Pedometers worked as motivators, self-monitoring and self-competition, speed of weight loss and regaining fitness, bolstering male identity in male environment. • Being is a group with others.	**Limitations identified by author:** The research only includes continuing attenders and the minority of men who dropped out are likely to be less positive. **Limitations identified by review team**: Details on sample not provided **Source of funding:** Medical Research Council. The main study (FFIT RCT) is funded by NIHR. **Any reasons for downgrading (internal or external validity)** Unclear if sample is representative of FFIT members as no demographic details provided.

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: Johnson (2011) **Citation:** Johnson, R. (2011) Weight Management Services Research (Unpublished) (Presentation) **Quality score: + External validity score: +** **Contributes to:** Users	**What was/were the research questions:** The objectives of the research included identification of: • Perceptions of weight management services (e.g. expected services, format, delivery method, location etc) • Likelihood to take part in weight management services • What they feel the current barriers are to accessing services **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Interviews - **By whom:** Researcher - **What setting(s):** Face to face - **When:** NR	**Description of programme:** No specific programme. A variety of weight management programmes listed as ones participants had used. They included: - Sunderland Council - Doctor - Weightwatchers - Slimming world - Nurse - Hospital - Lighter Life - Dietitian **Description of study participants:** 500 participants, 55% female. 25% aged 25-34, 35-44, 45-54 and 55-65. **What population were the sample recruited from:** NR **How were they recruited:** NR **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: Over the age of 16 who had a BMI of 30 or higher and who were currently undertaking any weight management activity.	**Brief description of method and process of analysis**: NR but results reported include descriptive % of responses for each question. **Key themes relevant to this review:** ***'Users' themes*** • Health a motivation for weight loss. • Women more likely to use a weight management service than men. • Most commonly used – weight watchers, slimming word • Should include activity, dietary advice, support. • Service should include walking, swimming, dancing (F), walking swimming, cycling (M). • Should include group sessions. • No preference for time of day, day of week. • Community centres and leisure centres most popular. • Barriers – embarrassment, going along alone, cost, access.	**Limitations identified by author:** NR **Limitations identified by review team**: Little description of methods. **Source of funding:** NHS Co. Durham and Darlington **Any reasons for downgrading (internal or external validity)** Data collection methods not clearly described; role of researcher not described; and only one method of analysis used. **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Lavin 2006 **Citation** Lavin J et al 2006. Feasibility and benefits of implementing a Slimming on Referral service in primary care using a commercial weight management partner. Public Health, 120, 872-881 **Study design** Quantitative and qualitative **Quality score** ++ **External validity score** + **Contributes to question(s)** users, services, referral	**What was/were the research questions:** Feasibility of building commercial weight management referral into primary care; assessment of potential barriers to enrolment and attendance **What theoretical approach:** NS **How were the data collected:** - **What method (s):** Postal questionnaires, administered depending on attendance - **By whom:** Attendance reported by Slimming World group leaders; some data from GP records; all other information collected via postal questionnaire - **What setting(s):** N/A - **When:** baseline, during 12 week intervention period, at week 24	**Description of programme:** Slimming World; participants given vouchers to cover membership and weekly group fee costs for 12 consecutive weeks attendance; participants could self-fund after 12 weeks (£3.75/week); choice of attending any group within South Derbyshire area **Description of study participants:** participants from 2 GP practices in South Derbyshire: 1 suburban, 1 inner city. 107 participants total; 89% female; 50% BMI 30-34.9, 26% BMI 35-39.9, 23% BMI >40; 24% <40 years old, 23% 40-50, 30% 50-60, 24% > 60; 43.5% household income < £10k pa, 28% household income £10k - £20k pa, 28.5% household income > £20k pa. **What population were the sample recruited from:** People attending practices for reasons other than weight management **How were they recruited:** (both how they were selected for the interview and, if	**Brief description of method and process of analysis:** Quantitative data analysed using SPSS, x^2 tests used to investigate categorical variables of those who did and did not enrol. Qualitative data reported narratively. **Key themes relevant to this review:** ***Users*** • Slimming on referral service in PC using commercial partner (Slimming World) • Attendance – older, more money, weight loss is important, • Completers of free sessions: white, 50-60yrs, no financial worries, • Non completion – timing / location not convenient, too anxious, health problems, childcare problems • Intention to continue – NOT – fees, desire to continue alone, benefits had dwindled, • Total completers – more money, lost weight ***Services*** Factors associated with enrolment: • Over 50 years of age • Household income > £10,000 pa • Regard weight loss as important to themselves Factors associated with completion of 12-week programme: • Caucasian • Aged 50 to 60 • Reported no financial worries in 3 weeks prior to recruitment Factors associated with completion of extended programme (incl. self-funding) • Suburban practice • Household income > £10,000 pa • Experienced ≥ 5% weight loss in first 12 weeks • Perceived ease in getting to meeting (people who walked or used transport other than a car to get to meeting were less likely to complete programme) Facilitators: • Subsidy of programme appeared to ameliorate effect of household income on participation • Authors note that because feedback on attendance and weight was possible, practices retained overall	**Limitations identified by author:** Absence of a control group, results based upon completion rather than intention to treat **Limitations identified by review team**: Only 9 out of 29 participants who did not complete the 12 week period responded to the questionnaire asking for reasons. **Source of funding:** Southern Derbyshire Health Authority and Slimming World **Any reasons for downgrading** External validity downgraded as unclear if selected participants are representative of the eligible population. **Other notes** Same study also reported in more detail

		relevant, how they were selected for the programme in the first place) **Were there specific exclusion criteria:** pregnant, attended a commercial slimming group within the previous 3 months **Were there specific inclusion criteria:** BMI ≥ 30, 18 to 75 years old	responsibility for patients with 'minimal extra resources needed to administer the referral process.' Barriers: • "Natural antipathy of the NHS for working with the private sector" • Financial barriers affected enrolment but not completion (i.e. once enrolled, completion rates the same) • Venues and timings of meetings ***Referral*** Uptake and Adherence • Of the 107 people recruited, 91 (85%) enrolled in a Slimming World group. 62 (68% of those who enrolled) completed 12 weeks attendance and 35 (37% of those enrolled) completed 24 weeks (anything after initial 12 weeks was self-paying). • Motivational factors, such as the importance of weight loss, reduced the uptake of referral, and adherence to the weight loss service. Those people who both enrolled and completed 12-weeks of the study were more likely to have cited that losing weight was of importance to them at recruitment. Similarly, a lack of confidence in their ability to lose weight was also relevant. • Household income, or perceived affordability of the scheme was also identified as a barrier to referral uptake and adherence.	in: Slimming World, Greater Derby Primary Care Trust, Central Derby Primary Care Trust. Slimming on referral – Tackling obesity in primary care: A feasibility study to assess the practicalities of working in partnership with the commercial slimming sector. Slimming World 2004. Some data comes from this report rather than from published article.

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: **Citation:** (CONFIDENTIAL) **Quality score: - External validity score: +** **Contributes to:**	**What was/were the research questions:** **What theoretical approach:** **How were the data collected:** **- What method**	**Description of programme:**	**Brief description of method and process of analysis:**	**Limitations identified by author:** **Limitations identified by review team:** **Source of funding:** **Any reasons for downgrading (internal or external validity)**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Nield (2012) **Citation** Nield L. The analysis and service evaluation of a community management programme: MSc Advanced Dietetic Practice Dissertation Project. University of Nottingham, 2012. **Study design** Quantitative (service evaluation) **Quality score** ++ **External validity score** + **Contributes to question(s)** users, services, referral	**What was/were the research questions:** Investigate the physical, psychological and dietary impact of the 12 week Weigh Ahead weight management programme and investigate the patients' perspective of the service **What theoretical approach:** NS **How were the data collected:** - **What method (s):** Questionnaires and anthropometric measurements (results from questionnaires reported here) - **By whom:** NS - **What setting(s):** Clinical - **When:** October 2010 to October 2011	**Description of programme:** Weigh Ahead – specialist, multidisciplinary team (dietitians, physiotherapists and psychologists) Tier 2 weight management service addressing diet, physical activity, and behavioural therapy. 12 weekly sessions, includes group meetings and one-to-one text, phone and e-mail contact. **Description of study participants:** 289 participants who attended interim 'Weigh Ahead' assessment. Mean BMI 45.6 (SD 6.64, range 34.3-68.5), approximately 67% female. 174 patients completed questionnaire; demographics for this subgroup not provided. **What population were the sample recruited from:** 1,100 participants in Sheffield's Weigh Ahead programme. Sheffield characterised by relatively high student count and residents over 50. Patients entering Weigh Ahead: mean BMI 45.2, 68% female, 90% White British or Irish. **How were they recruited:** Recruited at interim assessment appointment, further details NS.	**Brief description of method and process of analysis:** Data collated from paper records and cross referenced, then frequencies calculated using SPSS **Key themes relevant to this review:** ***Users*** • Would have liked treatment to be longer • Gave them clear plan for the future ***Services*** *Barriers:* • Statistically significant difference in dropout rates between least deprived and most deprived groups between referral and initial appointment (29% most deprived compared with 16% least deprived). Clinics provided in deprived areas but if patients don't attend initial assessment, unaware that the provision has been made for them. • Set length of programme discussed as problematic- author recommends flexibility of length to suit participants • Limits in funding, staffing and resources limit ability to see all patients 'efficiently and in a timely manner' by 'most appropriate' team member to maximise patient motivation ***Referral*** Uptake of referral differed between groups depending on their level of deprivation; increased knowledge and awareness of weight management may be needed for such groups, as well as to identify how this can be achieved with limited financial resources. *Figures*	**Limitations identified by author:** Only looking at patients who attended interim appointments, misses those who dropped out prior to this **Limitations identified by review team**: Only 60% of those who attended interim appointments completed questionnaires **Source of funding:** NS **Any reasons for downgrading** External validity downgraded due to insufficient information with which to judge if the sample population was representative of the source population **Other notes**

		Were there specific exclusion criteria: Pregnant **Were there specific inclusion criteria:** Aged 15 or older, registered with Sheffield GP, motivated to make changes to diet and lifestyle, BMI ≥35kg/m² with a comorbidity or BMI ≥40kg/m² without a comorbidity, tried and failed tier 1 services	• 74.8% of initial appointments were attended • 48% who attend 3 month assessment attend 6 month assessment • 50.6% of those who attend initial assessment attend 6 month appointment • 41.9% of those who attend initial assessment are discharged before final assessment – not clear data • 78% referred by GP • 80% believed self referral would be useful	

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Penn (2008). **Citation:** Penn, L. Moffatt, S. White, M. Participants' perspective on maintaining behaviour change: a qualitative study within the European Diabetes Prevention Study. BMC Public Health. 8:235. **Quality score** ++ **External validity score** + **Contributes to:** Users	**What was/were the research questions:** To explore the maintenance of behaviour change with a view to informing and improving intervention design. **What theoretical approach:** Framework approach **How were the data collected:** - **What method (s):** Semi structured interviews - **By whom:** Researcher - **What setting(s):** In a quiet room in Newcastle University - **When:** NR	**Description of programme:** European Diabetes Prevention Study (EDIPS). This included both a lifestyle programme and usual care control group. The intervention included individual motivational interviewing, delivered by a physiotherapist and a dietitian at three month intervals, aimed at reducing total food energy and fat intake, and at increasing activity. The control group received just general advice at the start of the trial. **Description of study participants:** 15 participants, 47% female with a mean age of 64. Length of follow-up after 3 to 5 years. The majority of participants were retired and married. 9 participants were from the intervention and 6 from the control group of the original study. **What population were the sample recruited from:** The Newcastle cohort of The European Diabetes Prevention Study (EDIPS). The sample included both intervention and control group participants. **How were they recruited:** Used individual data from the EDIPS in Newcastle (ISRCTN 15670600) to sample purposively, according to three success criteria in behavioural process outcomes: increased activity, calorie reduction and fat reduction. 25 participants were invited. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** Participants who maintained change in one or more of the behavioural process outcomes for at least two years were selected.	**Brief description of method and process of analysis:** Semi-structured interviews (45 minutes) were analysed using a framework approach. Coding was then discussed repeatedly within the research team. Second order constructs were created using an empirical phenomenology approach. **Key themes relevant to this review:** ***'Users'*** • Regular monitoring	**Limitations identified by author:** Small sample size **Limitations identified by review team**: Only people showing success in changing outcomes considered. **Source of funding:** Welcome Trust **Any reasons for downgrading (internal or external validity)** The eligible population was not representative of the sample source

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Citation: (UNPUBLISHED REPORT - CONFIDENTIAL) **Quality score + External validity score ++** **Contributes to:**	**What was/were the research questions** **What theoretical approach:** **How were the data collected:** - **What method (s):**	**Description of programme:** **Description of study participants:** **What population were the sample recruited from:** **How were they recruited:** **Were there specific exclusion criteria:** **Were there specific inclusion criteria:**	**Brief description of method and process of analysis:** **Key themes relevant to this review:**	**Limitations identified by author:** **Limitations identified by review team:** **Source of funding:** **Any reasons for downgrading** **Also see:**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year **Citation** **Study design** **Quality score +** **External validity score ++** **Contributes to question(s)** THIS REPORT IS CONFIDENTIAL	**What was/were the research questions:** **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** **How were the data collected:** **- What method**	**Description of programme:** **Description of study participants:** **What population were the sample recruited from:** **How were they recruited:** **Were there specific exclusion criteria:** **Were there specific inclusion criteria:**	**Brief description of method and process of analysis:** **Key themes relevant to this review:**	**Limitations identified by author:** **Limitations identified by review team:** **Source of funding:** **Any reasons for downgrading (internal or external validity)**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Reed (1999) **Citation:** Reed, Jackson, Harborne and Roberts (1999), Study to evaluate the effect of dietary advice and the role of exercise in obese women who are trying to lose weight. Journal of Human Nutrition and Dietetics, 12: 61–70.	**What was/were the research questions:** How were women with a BMI > 35 aged 18-70 years helped by dietary advice with aquafit exercise to reduce weight and increase physical activity? (What else would help?) **What theoretical approach:** NR **How were the**	**Description of programme:** Dietetic consultations (>3 consultations) and Aquafit attendance (>10 sessions). **Description of study participants:** 30 participants, 100% female. Only 5 who had attended both dietetic consultations and Aquafit. Four of the five had lost weight. **What population were the sample recruited from:** Individuals were selected for inclusion in the study	**Brief description of method and process of analysis:** Semi-structured interview. The frequency of responses to each question was tabulated. **Key themes relevant to this review:** ***'Users' themes*** • Want long term follow ups and support. • Barrier to weight loss – medical reasons so couldn't exercise.	**Limitations identified by author:** NR **Limitations identified by review team**: Small sample size and poor depth in reporting responses. **Source of funding:** Department of Health

Quality score: ++ **External validity score ++** **Contributes to: Users**	**data collected:** - **What method (s):** Semi-structured interview - **By whom:** Dietitian and research assistant - **What setting(s):** Coventry & Warwickshire Hospital - **When:** NR	using the following criteria: • women; • BMI >35 at initial consultation and aged 18-70 years in January 1997; • residents in Coventry; • had three or more consultations with a dietitian for dietary advice aiming to lose weight. Had attended aquafit sessions on 10 or more occasions. Those who did not respond were on average younger, heavier and loss less weight. **How were they recruited:** Identified from dietetic electronic database and records for attendance at Aquafit sessions **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** See above	• Wanted weighing regularly by third party.	**Any reasons for downgrading (internal or external validity)** **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Rowe and Basi, 2010 **Citation** Rowe, B. Basi, T. Executive summary: Maximising the appeal of Weight Management Services (EXECUTIVE SUMAMRY) (UNPUBLISHED) **Study design** Qualitative **Quality score:** + **External validity score:** - **Contributes to:** Users	**What was/were the research questions:** Maximize the appeal of weight management services. **What theoretical approach:** NS **How were the data collected:** - **What method (s):** Workshops, observation and interviews. - **By whom:** researcher - **What setting(s):** NR - **When:** NR	**Description of programme:** Variety of UK management services. **Description of study participants:** The research included a diverse range of demographic groups, including men, women, young people, and individuals from different ethnic backgrounds and of different income levels. **What population were the sample recruited from:** People attending weight management services in the UK **How were they recruited:** NR **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** Researchers met with numerous individuals, conducted workshops, and visited several weight management services producing case studies, films, and ethnographic narratives exploring the complex and emotive issue of weight management. **Key themes relevant to this review:** ***Users*** • Physical attractiveness is a motivator for many 'types' of women. • Health and wellbeing important for women with traditional family roles. Mobility was a motivator for older women. Fitness and/or health was an important factor for men. • Group support was seen to have spontaneous appeal to young women and those in a traditional family role. • Group support was seen as of secondary appeal to men. • Individual support appealed to affluent women. • Activity was seen as an important component by young women and young men. • Having family based activities was important for low income women. • Childcare and taking care of family was seen as a barrier to participation. • Lower income women worried about the cost of services. More affluent men were concerned with finding the time.	**Limitations identified by author:** NR **Limitations identified by review team**: Only an executive summary available which lacked methodological detail. **Source of funding:** Department of Health **Any reasons for downgrading (internal or external validity)** The role of the researcher was not clearly defined. The characteristics of respondents were not defined. It was not clear from the material available by who or how data was coded and themes derived.

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Shropshire Community Health trust 2012 **Citation:** Shropshire Community Health trust (2012). Why Weight? Plus: Programme Evaluation 2010 and 2011. (Unpublished) **Quality score: - External validity score:** + **Contributes to:** Users, Referral	**What was/were the research questions:** To evaluate the Weight wins plus scheme in Telford and Wrekin **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Questionnaire(s) - **By whom:** Weight Loss Mentors (WLMs) - **What setting(s):** - **When:**	**Description of programme:** Why Weight? Plus is a weight management scheme held in a community setting. Described as a behaviour change programme supported with motivational interviewing and cognitive behavioural therapy. It runs for 12 weeks with a 1 hour weekly group session and 3 30min one-to-one sessions at 3,6 and 9 weeks. Follow-up appointments are also offered at 6 and 12 months. **Description of study participants:** Retention: 6 participants responded Wellbeing/client satisfaction: NR **What population were the sample recruited from:** Why Weight? Plus (WW+) attendees (67% female). **Retention:** Clients who had self-discharged were invited to complete a questionnaire (over 4 months, 120 invited) **Wellbeing questionnaire:** Provided pre and post programme for all clients attending workshop programmes. **How were they recruited:** NR **Were there specific exclusion criteria:** BMI of 45 or above. **Were there specific inclusion criteria:** BMI >30 (>28 with co-morbidities)	**Brief description of method and process of analysis:** No analysis plan provided as data is descriptive. **Key themes relevant to this review:** ***Users*** • Longer follow ups • More individual meetings with mentor • Leader personality important ***Services*** *Barriers:* • Poor retention. Trialled different approaches to improve retention: signed client contracts; 'did not attend' policy where 3 missed meetings resulted in discharge; text and phone appointment reminders; text and phone contact if did not attend. Report that used 'tougher approach' in 2010 and 'softer approach' in 2011. Prior to 2010, retention rate approx. 50%. 2010, retention rate up to 66%. 2011, retention rate back down to 51%. • Strong feeling amongst GPs and practice managers that economic downturn changed client's priorities away from 'lesser health issues such as weight to more immediate life rather than lifestyle concerns.' No hard evidence to support belief but reduced referral rate believed to be an indicator. **Referral** • Analysis of referrals by GP practice for 2011 showed a total practice list size of 164,522. Referrals were an average 0.84%. • The highest referring practice was 2.22% and all but one of the practices in the most deprived areas were below the average referral rate. • The numbers of participants referred in 2011 was down 23% on 2010. • In 2010, 95% of referrals were by GP. They then trained practice nurses, health visitors and	**Limitations identified by author:** NR **Limitations identified by review team**: Little research methodology provided. Unclear how representative the sample is. **Source of funding:** NR **Any reasons for downgrading (internal or external validity)** No clear account of sampling, data collection or researcher's role. Characteristics of the sample not presented and data not rich.

			dietitians to refer and this rate dropped to 80% • The system organized such that GP (etc) sends letter to Why weight, clients has to make first appointment. If no contact then a reminder letter is sent after 2 weeks. *Conversion into appointment:* • In 2010 51% of referrals were converted into appointments • In 2011/2012 referrals were down, BUT conversion rate was up to 65% *Retention on programme:* • Target 75% • Introduced signed client contracts • 3 DNAs then discharged • Text and telephone reminders • Courtesy letters • All seemed to help retention	

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Shropshire Community Health trust 2012b **Citation:** Shropshire Community Health trust (2012). Why Weight? for Tomorrow: an evaluation of its impact and effectiveness (Unpublished) **Quality score: - External validity score:** + **Contributes to:** Users, Referral	**What was/were the research questions:** To evaluate the Weight wins pilot in Telford and Wrekin **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Programme evaluation questionnaire(s) - **By whom:** NR - **What setting(s):** NR - **When:** End of programme	**Description of programme:** 12 week intensive clinical and behavioural change programme to support patients in making lifestyle changes that would enable them to lose weight by improving their diet and increasing their levels of physical activity with the additional option of monitored weight loss medication. The programme was based around a prescribing nurse (PN), a self-management worker (SMW), assessing the patient needs and developing an individual programme to meet those needs **Description of study participants:** n = 37 engaged at end of programme **What population were the sample recruited from:** Why Weight? Attendees. Pre programme 46% had a BMI > 50. Of those that completed, 62% achieved >5% weight-loss. **How were they recruited:** NR **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** BMI >40	**Brief description of method and process of analysis:** No analysis plan provided as data is descriptive. **Key themes relevant to this review:** ***'Users'*** • Want longer workshops • Want physical activity	**Limitations identified by author:** NR **Limitations identified by review team**: Little research methodology provided. Unclear how representative the sample is. **Source of funding:** NR **Any reasons for downgrading (internal or external validity)** No clear account of sampling, data collection or researcher's role. **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year Thompson and Thomas 2000 **Citation** Thompson, RL; and Thomas, DE (2000), A cross-sectional survey of the opinions on weight loss treatments of adult obese patients attending a dietetic clinic. International Journal of Obesity. 24, 164-170 **Study design** Qualitative **Quality score: ++** **External validity score: ++** **Contributes to:** Users	**What was/were the research questions:** To survey a group of obese people attending a dietetic clinic in Portsmouth to determine their views and opinions about treatments to lose weight. **What theoretical approach:** NR **How were the data collected:** Patients were recruited from adults attending dietetic outpatient clinics for obesity within the Health Authority - **What method (s):** Questionnaire - **By whom:** Questionnaire provided by dietitian and sent back anonymously to different department. - **What setting(s):** NR - **When:** NR	**Description of programme:** Participants were receiving support from a dietitian. They provided views on other slimming programmes but no one in-particular**.** **Description of study participants:** 161 participants. 71% were female, age ranged from 18 to 85 years. 30% of participants had a BMI of 40kg/m^2 or more. **What population were the sample recruited from:** Two hundred and twelve questionnaires were administered across a range of dietetic clinics and 161 questionnaires were returned. **How were they recruited:** via dietetic clinics **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** BMI of 30 kg/m^2	**Brief description of method and process of analysis:** A questionnaire (48 questions on a 5 point Likert scale) was developed from a series of three focus groups. Dietitians' also provided information on each patient. Logistic regression analysis was used to assess the independent effect of gender, age, number of attempts to lose weight, body mass index and medical condition on the results. **Key themes relevant to this review:** ***'Users' themes*** Women more likely to go to groups, men use physical activity Most popular activities walking and swimming – barriers embarrassment and cost	**Limitations identified by author:** The survey was based on information from patients who had been referred to a dietitian and therefore may not be representative of the larger population. **Limitations identified by review team**: **Source of funding: NR** **Any reasons for downgrading (internal or external validity)** NA **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: Visram et al. (2009) **Citation:** Visram, S. Crosland, A. Cording, H (2009). Triggers for Weight Gain and Weight Loss Amongst Participants in a Primary Care Based Intervention: An Exploratory Study. British Journal of Community Nursing, 14 (11): 495-501 **Quality score: ++** **External validity score: ++** **Contributes to:** Users	**What was/were the research questions:** To present qualitative evidence that can inform the development of effective and acceptable strategies for the prevention, treatment and management of overweight and obesity in primary care and community settings **What theoretical approach: NR** **How were the data collected:** - **What method (s):** Semi-structured interview - **By whom:** Researchers - **What setting(s):** Either in participants home (n=19) or Northumbria University (n=1). - **When:** Within one month of completing the intervention.	**Description of programme:** Primary care-based weight management programme. The Specialist Weight Management Service (SWiMS) was developed by Newcastle PCT. It involved eight consecutive weekly meetings and four monthly follow-up meetings, with input from a nurse specialist, dietitian, exercise instructor and a psychologist. Participants were seen at a primary care clinic and other local venues in groups of 15–20. The level 3 intervention (targeting morbidly obese individuals) offered the option of either attending group sessions or being seen on a one-to-one basis by the nurse specialist at home or in the clinic. **Description of study participants:** 20 participants responded. 75% were female with a mean age of 46 years (ages ranged from 21 to 70 years). 80% had a BMI 25-40kg/m^2 and 20% had a BMI above 40. **What population were the sample recruited from:** Potential participants were recruited through the programme's nurse lead, who distributed information packs to all new SWiMS patients over a 3-month period. **How were they recruited:** NR **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: BMI >25kg/m^2 before attendance, one or more co-morbidities before attendance, and living in areas of socio-economic deprivation.	**Brief description of method and process of analysis**: Semi-structured interviews (30-60minutes) were analysed using thematic representation. Each researcher independently analysed transcripts before discussing emerging themes. **Key themes relevant to this review:** ***'Users' themes*** • Referral by HP legitimised their problem • Want one to one professional support • Want tailored individualised support • Valued group support from peers	**Limitations identified by author:** Interviews with younger people, those from different ethnic groups or living in other areas might have identified further issues. Relatively small sample size. **Limitations identified by review team**: NA **Source of funding:** NR **Any reasons for downgrading (internal or external validity)** NA **Other notes**

Study details	Research parameters	Programme, population and sample selection	Outcomes and methods of analysis/Results	Notes
Author and year: Withnall (2008) **Citation:** Withnall, S. Mill, P (2008), A Qualitative Insight into Obesity Adult Service Users (Unpublished) **Quality score: ++** **External validity score: ++** **Contributes to:** Users	**What was/were the research questions:** Scope the behaviours and motivational issues related to weight management with the chosen target audience to inform current and future weight management provision in Kirklees **What theoretical approach:** NR **How were the data collected:** - **What method (s):** Focus groups - **By whom:** Researchers - **What setting(s):** Face to face in two cities (Huddersfield, Batley) - **When:** March/April 2008	**Description of programme:** No specific programme. Focus groups included people who were taking part in: Commercial weight management activities; Self-help weight management; an exercise referral scheme; or the South Asian Healthy Living Partnership.. **Description of study participants:** Groups included a 'good spread' of respondents in terms of type of weight management activity, gender and age (n=NR). One focus group included only older, South Asian women (n=7) and was conducted with a translator. **What population were the sample recruited from:** NR **How were they recruited:** Respondents were recruited on the street and using contacts connected to commercial weight management organisations. **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria**: Over the age of 16 who had a BMI of 30 or higher and who were currently undertaking any weight management activity.	**Brief description of method and process of analysis**: Four 90 minute focus groups (of people (n=5-10) undertaking commercial weight management activities or engaging in self-help weight management. One focus group with people taking part in the exercise referral scheme, Get Food Wise & Exercise. One focus group was conducted with South Asian women taking part in the 'South Asian Healthy Living Partnership'. This was conducted with the help of a trabslator. **Key themes relevant to this review:** ***'Users' themes*** • Disappointed with help from GP • GPs quick to judge, patients feel embarrassed and barrier to future help seeking. • Chronic problems felt that GPs had lost interest in them. • Barriers to help seeking – time, cost, self-consciousness, fear of being judged, childcare • Do not believe they can change so don't try, link between diet and health not always believed in. • Reasons for help seeking: enjoy group, inclusion, community, evidence of progress is motivating, non-judgemental approach. • Want to eat reasonable normally and not deprived, appearance a grater motivator than health, want a tailored approach BUT like the group • Consuming easily available foods NOT special diets, foods not banned. • Enjoyment not boredom • Not aware of publicly funded schemes. • Good – sharing common goals, social community experience, practical help, advice and education. • Leaders – committed good for motivation. • More emphasis on lifestyle management not just weight loss.	**Limitations identified by author:** NR **Limitations identified by review team**: Methods and sampling size not reported in detail **Source of funding:** Kirklees PCT **Any reasons for downgrading (internal or external validity):** NA **Other notes**

Appendix 5. External validity checklists for each included study

Table 15 - External Validity Summary

Study ID	Is the source population or source area well described?	Is the eligible population or area representative of the source population?	Do the selected participants or areas represent the eligible population or area?
Ahern 2013 (3)	Yes	Yes	Yes
Allen 2011 (14)	Yes	Yes	Yes
Anon 2012 (82)	Yes	Yes	Yes
Bidgood 2005 (15)	Yes	Yes	Unclear
Counterweight 2008 (16)	Yes	Yes	Unclear
Campaign Company 2008 (29)	Yes	No	No
Epstein 2005 (31)	Yes	Yes	Yes
Gimlin 2007 (17)	Yes	No	Yes
Gray 2013 (4)	Yes	Yes	No
Greener 2010 (18)	Unclear	Yes	Unclear
Herriot 2008 (19)	Yes	Yes	Yes
Hindle 2012 (9)	Yes	Yes	Unclear
Hoppe 1997 (30)	Yes	Yes	Yes
Hunt 2013 (20)	Yes	Yes	Unclear
Johnson 2011 (6)	Yes	Yes	Unclear
Lavin 2006 (21)	Yes	Yes	Unclear
CONFIDENTIAL (5)	Yes	Unclear	Yes
Nield 2012 (22)	Yes	Yes	No - 60% invited took part
Penn 2008 (24)	Yes	Yes	No
CONFIDENTIAL (7)	Yes	Yes	Yes
CONFIDENTIAL (8)	Yes	Unclear	Yes
Reed 1999 (25)	Yes	Yes	Yes
Rowe 2010 (12)	Yes	No	No
Shropshire Community NHS 2012 (10)	Yes	Yes	No
Shropshire Community NHS 2012b (11)	Yes	Yes	No
Thompson 2000 (26)	Yes	Yes	Yes
Visram 2009 (27)	Yes	Yes	Yes
Withnall 2008 (28)	Yes	Yes	Yes

Appendix 6. Internal validity checklists for each included study

Table 16 – Quantitative studies

Study ID	Was selection bias minimized?	Was the selection of explanatory variables based on a sound theoretical basis?	Were confoudning factors identified and controlled?	Were the outcome measures and procedures reliable?	Were the outcome measurements complete?	Were all important outcomes assessed?	Was there a similar follow-up time in exposure and comparison groups?	Was follow-up time meaningful?	Were multiple explanatory variables considered in the analyses?	Were differences in follow-up time and likely confounders adjusted for?	Was the precision of association given or possible to calculate from the information provided?
Hoppe 1997 (30)	Unclear	n/a	Yes	Yes	Yes	Yes	n/a	n/a	Yes	n/a	No
Johnson 2011 (6)	Unclear	Unclear	Yes	Yes	Yes	Yes	n/a	Yes	Yes	n/a	Yes
Thompson 2000 (26)	Yes	Yes	Yes	n/a	Yes	Yes	n/a	n/a	Yes	n/a	Yes

Table 17 – Qualitative studies

Study ID	Is a qualitative approach appropriate?	Is the study clear in what it seeks to do?	Is the research design/methodology defensible/rigorous?	Was the data collection carried out appropriately?	Is the role of the researcher clearly described?	Is the context clearly described?	Were the methods reliable?	Is the data analysis sufficiently rigorous	Is the data rich?	Is the analysis reliable?	Are the findings convincing?	Are the findings relevant to the aims of the study?	Are the conclusions appropriate?
Ahern 2013 (3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Allen 2011 (14)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Anon 2012 (82)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Bidgood 2005 (15)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Campaign Company 2008 (29)	Yes	Yes	Unclear - Sampling methods unclear, no rationale given	No - No description of data collection methods	Unclear - Paper does not describe how research was explained/presented to participants	No - Setting for interviews/focus groups NS	Yes	Unclear - Procedure not explicit, unclear how systematic the analysis was	Yes	Unclear - Unclear if more than one researcher coded data	Yes	Yes	Yes
Counterweight 2008 (16)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes
Epstein 2005 (31)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gimlin 2007 (17)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Gray 2013 (4)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Study ID	Is a qualitative approach appropriate?	Is the study clear in what it seeks to do?	Is the research design/methodology defensible/rigorous?	Was the data collection carried out appropriately?	Is the role of the researcher clearly described?	Is the context clearly described?	Were the methods reliable?	Is the data analysis sufficiently rigorous	Is the data rich?	Is the analysis reliable?	Are the findings convincing?	Are the findings relevant to the aims of the study?	Are the conclusions appropriate?
Greener 2010 (18)	Yes	Yes	Yes	Yes	Yes	No - Setting not described, very little detail re: included participants	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Herriot 2008 (19)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hindle 2012 (9)	Yes	Unclear	Unclear	Unclear	No	No	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes
Hunt 2013 (20)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Johnson 2011 (6)	Yes	Yes	No	No	No	Yes	No	Unclear	Yes	Unclear	Yes	Yes	Yes
CONFIDENTIAL 2012 (5)	Yes	Yes	No	Yes	No	No	Unclear	No	Yes	No	No	Yes	Yes
Nield 2012 (22)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Penn 2008 (24)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
CONFIDENTIAL 2011 (7)	Yes	Yes	No	Yes	No	Yes	No	No	Yes	No	Yes	Yes	Yes
CONFIDENTIAL 2012 (8)	Yes	Yes	Unclear	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Reed 1999 (25)	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Rowe 2010 (12)	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Unclear	Yes	Yes	Yes

Study ID	Is a qualitative approach appropriate?	Is the study clear in what it seeks to do?	Is the research design/methodology defensible/rigorous?	Was the data collection carried out appropriately?	Is the role of the researcher clearly described?	Is the context clearly described?	Were the methods reliable?	Is the data analysis sufficiently rigorous	Is the data rich?	Is the analysis reliable?	Are the findings convincing?	Are the findings relevant to the aims of the study?	Are the conclusions appropriate?
Shropshire Community NHS 2012 (10)	Yes	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes	Yes
Shropshire Community NHS 2012b (11)	Yes	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes	Yes
Visram 2009 (27)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Withnall 2008 (28)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Appendix 7. Standard Evaluation Framework (SEF) for weight management interventions

This section presents the core elements of the Standard Evaluation Framework. Essential criteria are presented as the minimum recommended data for evaluating a weight management intervention. Desirable criteria are additional data that would enhance the evaluation. The supporting guidance, in section four, describes why particular criteria have been categorised as essential or desirable, and gives further information on collecting data. *Click on a cell to be taken to the corresponding explanation.*

	ESSENTIAL	DESIRABLE
Part one: intervention details		
1. Title/name of intervention		
2. Aims and objectives (including primary and secondary outcomes)		
3. Intervention timescale (exposure, quantity and duration)		
4. Intervention delivery dates		
5. Duration of funding (including dates)		
6. Location and setting		
7. Description of intervention: • target population; • content; • delivery method; • deliverer; • unit of delivery; Details of quality assurance mechanisms		
8. Rationale for intervention (including theoretical basis)		
9. Core staff competencies required		
10. Equipment and resources required		
11. Incentives for attendance		
12. Details of training needs (including quality assurance of training)		
13. Method of recruitment and referral		
14. Participant consent mechanism		
15. Participant admission/exclusion criteria		
16. Cost of intervention per participant		
17. Cost to participant		
18. Detailed breakdown of cost		
19. Type of evaluation and evaluation design		
20. Details of equality impact assessment		
21. Relevant policy and performance context		
22. Details of health needs assessments that have been conducted		
23. Contact details		
24. Commissioner(s) of the intervention and sources of funding		
25. Declaration of interest		
26. Details of type and extent of any clinical involvement		

	ESSENTIAL	DESIRABLE
Part two: demographics of individual participants		
27. Age	■	
28. Sex	■	
29. Ethnicity	■	
30. Disability	■	
31. Measure of socio-economic status	■	
32. Additional information including marital status, medical history, smoking status, parity and family make-up		■
33. Details of parental weight status (for children)		■
Part three: baseline data		
34. Height and weight (to calculate Body Mass Index)	■	
35. Additional proxy measures for adiposity		■
36. Measure(s) of dietary intake and behaviour	■	
37. Measure(s) of physical activity levels and behaviour	■	
38. Potential facilitators of, and barriers to, lifestyle change		■
Part four: follow-up data		
Impact evaluation		
39. Follow-up data: minimum of three follow-up points, including at one year	■	
40. Follow-up data on key measures (height, weight, physical activity and diet) over a greater term than one year		■
41. Height and weight (to calculate Body Mass Index)	■	
42. Follow-up data on additional proxy measures for adiposity (if collected at baseline)		■
43. Dietary intake and behaviour	■	
44. Physical activity levels and behaviour	■	
45. Follow-up measures on potential facilitators of, and barriers to, lifestyle change (if collected at baseline)		■
Process evaluation		
46. Number invited	■	
47. Number recruited	■	
48. Number attended each session or contact point	■	
49. Number completed	■	
50. Number of participants at each follow-up point	■	
51. Methods of data collection and timings		■
52. Reasons for opt-out (where applicable)	■	
53. Details of any unexpected outcomes and/or deviations from the intended intervention design and the reasons why		■
54. Participants' satisfaction with the intervention	■	
55. Plans for sustainability		■
Part five: analysis and interpretation		
56. Summary of results compared to baseline (for primary and secondary outcomes)	■	
57. Details of any further analyses and statistical methods used		■
58. Limitations and generalisability		■

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