NICE Guidance title: Managing overweight and obesity among children and young people: lifestyle weight management services

Review 2: The barriers and facilitators to implementing lifestyle weight management programmes for children and young people

REVIEW 2 - APPENDICES

Produced by Support Unit for Research Evidence (SURE), Cardiff University
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APPENDICES

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ABBREVIATIONS

BMI	Body mass index
C	Control group
CS	Correlation study
DH	Department of Health
F	Female
GP	General Practitioner
I	Intervention group
IPA	Interpretative Phenomenological Analysis
LWMP	Lifestyle weight management programme
MRC	Medical Research Council
NCMP	National Child Measurement Programme
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NIHR	National Institute for Health Research
PARIHS	Promoting Action on Research Implementation in Health Services
PCT	Primary Care Trust
PE	Process evaluation
Qual	Qualitative study
SES	Socio-economic status
UC	Usual care
WLC	Wait list control
Xsec	Cross sectional study

APPENDIX A – INCLUDED STUDIES: EVIDENCE TABLE

Study details	Research parameters	Population and sample selection	Outcomes and methods of analysis / Results* *Note themes beginning with 'misc' were not common themes across studies	Notes
Author and year: Alm 2008 **Country:** United States **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To evaluate a national family-centred weight control programme run within a commercial weight management group setting where young people aged 11–15 years were able to attend the weekly group sessions at no charge, although with the proviso that they attend with a supporting adult. Questions: • Why did you join the weight management program for teens? • How or what do you expect to change? How much progress have you made on the goals you set when joining Teenways? • What are your new goals for making behavioural changes? • What helps you in making the changes that you are trying to make? • What keeps you from making the changes that you are trying to make? The probes for each question asked the participant to give an example or to provide a more detailed explanation of "how" or "why." **What theoretical approach (e.g. grounded theory,**	**Description of study participants:** USA; 12 girls, 6 boys; aged 13-16 yrs; 11 Hispanic, 6 African-American, 1 Caucasian; BMI ranged from 26.2 to 62.7 kg/m2. All participant families received Medicaid or NY State Child Care Plus. **What population were the sample recruited from:** Adolescents who had completed 3 months of the Teenways project. **How were they recruited:** As participants of Teenways project. **How many participants were recruited:** 18/27 adolescents. **Were there specific exclusion criteria:** No. **Were there specific inclusion criteria:** Adolescents who had completed 3 months of the Teenways project. **Motivation / referral of participants:** Not provided.	**Brief description of method and process of analysis:** One to one semi-structured telephone interviews comprised of open-ended questions and conducted by first author and lasted between 15 and 30 minutes. Words were examined within a single interview to determine codes and conceptual categories. Every response of the interview was assessed and word units were labelled with a relevant code. Consistency of interviews was evaluated by comparing codes in the entire interview for cohesion and differences. Codes were compared between all interviews. Every response in each interview was evaluated, and word units were coded using labels generated in the first step or with new codes for words not previously present. All codes within each interview were placed in categories to reveal emerging patterns and themes. Themes were compared between interviews. A descriptive summary of each theme was compiled. Another member of the research team verified categories and themes. **Key themes relevant to this review:** *Participants* Barriers: • Family members work against or sabotage weight management attempts. • Misc_friends or peers negative influence on weight management. Enablers: • Goal setting and rewards. • Support from providers is highly regarded. • Goal to improve health as incentive to joining Lifestyle weight management programme (LWMP). • Perception that LWMP improves children's psychological wellbeing. • Goal to improve factors related to social acceptance ('fitting in') as incentive to join LWMP. • Family support for children while attempting weight management. • Misc_Goal to gain knowledge regarding weight management as incentive to joining LWMPs. • Misc_Goal to improve appearance as incentive to joining LWMPs. • Misc_Goal to improve sports ability as incentive to joining LWMPs.	**Limitations (author):** Small sample size which limits the generalisability to all adolescents of low socioeconomic status. **Limitations (review team):** Research methods could have been more rigorous. **Evidence gaps and/or recommendations for future research:** Research to assess goal-setting process. **Funding sources:** American Heart Association. **Applicable to UK?** (if appropriate): Possibly but need more information on Teenways program.

	Interpretative Phenomenological Analysis [IPA]) does the study take (if specified): None. **How were the data collected:** • **What method(s):** One to one semi-structured interviews were conducted by telephone and lasted between 15 and 30 minutes. • **By whom:** By first author. • **What setting(s):** USA; Community. • **When:** Not provided.			
Author and year: Avery 2012 **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** Which adults attended the program with the young members, whether this adult was already a member of the group or if they joined as a member at the same time as the young person and, if so, whether they joined to also receive weight management support themselves or just to support their child. Information was also requested on whether other immediate family members attended the group and what recommendation was provided to the facilitator by the supporting health professional. The feelings of the group facilitator about having young people as part of their group	**Description of study participants:** UK; community; age 11-15yrs; 91st–98th percentile: 16 girls & 2 boys, 98–99.6th percentile: 18 girls &3 boys, >99.6th percentile: 13 girls & 5 boys; 22 group facilitators. **What population were the sample recruited from:** Facilitators of group with 6-18 young members. **How were they recruited:** Adolescents participating in Family Affair programme. **How many participants were recruited:** 22. **Were there specific exclusion criteria:** No. **Were there specific inclusion**	**Brief description of method and process of analysis:** Qualitative data analysed by thematic content and recurring themes identified and analysed using a cyclical, reflective process. Discussion of the themes and sub themes, including a second researcher, was undertaken and agreed upon. Analysis of the data involved the processes of data reduction, data display and data complication. These three processes involved selecting and focusing the data, and data organisation followed by data construction to draw conclusions. **Key themes relevant to this review:** *Participants* Barriers: • Lack of parental support for children while attempting weight management.	**Limitations (author):** None related to qualitative data. **Limitations (review team):** None. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** All of the named authors are employed in some capacity by Slimming World. All aspects of the data collection were funded by Slimming World. **Applicable to UK?** (if appropriate): Yes.

	were assessed via two questions included in the questionnaire and an open question inviting qualitative comments. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not specified. **How were the data collected:** • **What method(s):** Questionnaire distributed to group facilitator. • **By whom:** Returned by post to principal investigator. • **What setting(s):** UK; Community. • **When:** Not specified though program launched in Jan 2006.	**criteria:** No. **Motivation / referral of participants:** Not provided.		
Author and year: Barlow 2006 **Country:** United States **Study design:** Cross sectional **Quality score: (inc external validity for surveys)**	**What was/were the research questions:** What were the reasons from parents for non return to a paediatric weight management programme. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not specified. **How were the data collected:** • **What method(s):** Questionnaire. • **By whom:** Research assistant. • **What setting(s):**	**Description of study participants:** F=64%; White=55%; African-American=40%; mean age = 11.9 years (SD=3.6); mean BMI=39.9kg/m2 (SD = 11.3). **What population were the sample recruited from:** Parents of families who attended two or fewer paediatric St. Louis University (USA) weight management programme visits. **How were they recruited:** Questionnaire (9 questions) to 85 of 95 parents as described above. 10 families missed through	**Brief description of method and process of analysis:** Questionnaire sent by post. Research assistant called up to three times to ask for completion over the phone. Multiple logistic regression to explore responses by baseline variables (age, race, gender, BMI quartile, medical conditions, one or two parent family). Also percentage response rates to each question. **Key themes (with illustrative quotes if available) relevant to this review:** *Participants:* Barriers: • Lack of children's motivation. • Individual and family demands. • Lack of parental motivation. • Inconvenient intervention scheduling. Facilitator : • Parental motivation.	**Limitations (author):** Small sample size. 50% attrition **Limitations (review team):** No open ended response options and questions may have been leading. **Evidence gaps and/or recommendations for future research:** Examine the benefits of fitting weight control programmes to expectations of families. Further exploration of attrition in research. **Funding sources:** Agency for Healthcare

	Community. • **When:** Spring 2002.	administrative oversight. **How many participants were recruited:** 85 questionnaires with 43 responses = 50,6%. **Were there specific exclusion criteria:** - **Were there specific inclusion criteria:** - **Motivation / referral of participants:** Families were self referred or physician referred.		Research and Quality. **Applicable to UK?** (if appropriate): Possibly. University run community based programme in the USA. However, the insurance coverage question is not relevant to the UK.
Author and year: Braet 2010 **Country:** Belgium **Study design:** Cross-sectional **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** Evaluate the pre-treatment characteristics and barriers in completers and non completers for families applying for obesity treatment. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Barriers-to-treatment model. **How were the data collected:** • **What method(s):** Questionnaire. • **By whom:** The study team. • **What setting(s):** During the family intake session, children and parents completed questionnaires. • **When:** February 2007-February 2008.	**Description of study participants**: 72 children (27 boys 45 girls), mean age 10.46 (SD 2.56), 26% low/lower middle class, 54% middle class, 20% upper middle class . **What population were the sample recruited from:** Families who sought advice for their child at the Ghent University Clinic. **How were they recruited:** Following an appointment via the telephone they were invited to an intake session when they completed the questionnaires. **How many participants were recruited:** 72. **Were there specific inclusion criteria:**	**Brief description of method and process of analysis:** Children's eating behaviour was measured by the Dutch Eating Behaviour Questionnaire – child version and parent version. Items are scored on a 5 point Likert scale. The Self perception profile for children and the Self perception profile for adolescents were used to assess self esteem. The Childs Behaviour Checklist was used to assess the parental perspective on emotional and behavioural problems of the child. The team estimated the motivation of parents and the child on a 5 point rating scale and expectations of the parent were investigated. Motives to stop attending treatment were rated on a 5 point rating scale using two instruments (Kezdin *et al*. 1997 and Garcia & Weisz (2002)). The reason for ending treatment questionnaire was used and Barriers to Treatment participation scale were used. Questionnaires were collected after making an appointment (inclusion criteria, age, self-reported weight), at the intake session (demographic data, gender SES, family characteristics, motivation for treatment and child psychological variables), at the last session attended (weight and height), and 1 years after admission (motives for stopping Barriers to treatment). At 1 year the questionnaires were posted with telephone follow-up to encourage completion. Completers and non-completers were compared for data collected at all time points.	**Limitations (author):** Only a select group of families were studied. There were a large number not meeting the inclusion criteria. We have no data on the motives that play in families during the decision to stop (only one year later). Attrition was not avoided though comparisons were made. Scales used are well-established instruments but further research is necessary on their reliability on validity for use in samples of people seeking treatment for their overweight. **Limitations (review team):** More girls than boys in

		Child aged between 4 and 16. Overweight. Medical clearance from a physician that note a secondary cause for being over overweight. Living within radius of 50 km of clinic. Mastering English, French or Dutch language. **Motivation / referral of participants:** Families seeking advice.	**Key themes relevant to this review:** *Participants* Barriers: • Lack of relevance or difficulty in implementing interventions and/or knowledge learned into home life. • Lack of parental motivation. • Not recognising or accepting child is overweight or obese.	sample, more from middle class social class. Those who participated were slightly older as were the mothers but were slightly heavier. **Evidence gaps and/or recommendations for future research:** **Funding sources:** Intensive study of families during the admission procedure and treatment would be needed. Further research in to the reliability of the barriers to treatment and motives for stopping questionnaires. Measures that assess qualitative individual differences in experiencing barrier to stop. Childs readiness to change needs to be explored. **Applicable to UK?** (if appropriate): Yes.
Author and year: Brennan 2012 **Country:** Australia **Study design:** Process evaluation The CHOOSE HEALTH intervention **Quality score: (inc external validity for surveys)**	**What was/were the research questions:** To explore barriers to treatment completion in a sample of adolescents and their parents who either completed or did not complete family-based cognitive behavioural lifestyle intervention for overweight or obese adolescents. **What theoretical approach**	**Description of study participants:** 56 overweight or obese (as defined by international cut-off points) adolescents (52% female) aged 11.5-18.9 years (mean = 14.5, SD = 1.8) and a parent. Australia. **What population were the sample recruited from:**	**Brief description of method and process of analysis:** Questionnaire had single open ended question regarding the participants' reason for discontinuing the program (non-completers) or barriers to participation (completers) then 3-point Likert responses to 72 treatment barriers. % response to questions and number of barriers (+SD) reported by program completers and non-completers. **Key themes relevant to this review:** *Participants* Barriers: • Goal setting.	**Limitations (author):** None stated. **Limitations (review team):** Questionnaire may have 'led' responses by suggesting barriers. More open-ended questionnaire/focus groups would have leant strength to findings. **Evidence gaps and/or**

PE	**(e.g. grounded theory, IPA) does the study take (if specified):** None specified though authors stated that the questionnaire was informed by empirical and theoretical attrition literature and items were reviewed by researchers familiar with the literature. **How were the data collected:** • **What method(s):** Telephone questionnaire developed for the study. • **By whom:** Independent research assistant. • **What setting(s):** Community. • **When:** Not stated but web search suggests circa 2006.	Families enrolled in an RCT of the family-based cognitive behavioural lifestyle intervention. **How were they recruited:** An end of treatment telephone questionnaire of all participants. **How many participants were recruited:** All 56 families were approached. The telephone questionnaire was completed by 96% adolescent and 91% parent completers and 100% adolescent and 94% parent non-completers. **Were there specific exclusion criteria:** Any disability or illness that prevented treatment participation. **Were there specific inclusion criteria:** Aged 11-19; overweight or obese; living with adult caregiver prepared to be fully involved in treatment. **Motivation / referral of participants:** 57% of families did not complete treatment and maintenance phases of the intervention.	• Monitoring and feedback. • Individual and family demands limit attendance and adherence to LWMP. • Low children's motivation as barrier to adhering to LWMP. • Misc_intervention has too much homework. • Misc_transport difficulties.	**recommendations for future research:** Explore the impact of author-recommended modifications on treatment completion and outcomes. **Funding sources:** Not stated. **Applicable to UK?** (if appropriate): Yes - Australia a similar setting.
Author and year: Ci Research 2009 **Country:** UK **Study design:**	**What was/were the research questions:** • Identify why stakeholders (e.g. school nurses, GPs, paediatricians, other	**Description of study participants:** Demographic details were only provided for recipients of the NCMP letter. 60% aged	**Brief description of method and process of analysis:** All interviews were conducted in accordance with the Market Research Society Codes of Conduct which assure respondent confidentiality. The interviews followed discussion guides designed by Ci Research and approved by Telford and Wrekin PCT and lasted approximately 30	**Limitations (author):** None stated. **Limitations (review team):** Interviewees were chosen by the PCT and unclear if

Qualitative
Quality score: (inc external validity for surveys)
–
	health/fitness sector representatives) with access to families believe that engagement is low and to ascertain their feelings towards directing families to weight management programmes;
	• Explore with parents who have engaged with the 'Y W8?' programme their motivations for doing so, the key triggers which made them take action and their views on the support provided;
	• Consult with parents who have received a National Child Measurement Programme (NCMP) letter informing them that their child is either overweight or very overweight in order to identify their:
	  ○ Attitudes to the weight of their child(ren); Reactions to the NCMP letter and its content;
	  ○ Actions following the receipt of the NCMP letter;
	  ○ Views on the barriers to healthy eating and becoming more active, including those which dissuade / prevent attendance at programmes such as 'Y W8?'
	What theoretical approach (e.g. grounded theory, IPA) does the study take (if
		between 41 and 50 years, 30% aged between 31 and 40 and 10% aged over 50; 80% married, 10% divorced, 5% separated and 5% co-habiting; 100% described themselves as 'White British';
		What population were the sample recruited from:
		Stakeholders in and attendees to the Y W8 programme, recipients of NCMP letter.
		How were they recruited:
		Identified by Telford and Wrekin PCT.
		How many participants were recruited:
		10 stakeholders with knowledge of the Y W8 programme: 3 school nurses, 2 GPs, 2 paediatricians, 3 health/fitness centre representatives.
		10 parent attendees to the Y W8 programme.
		20 parents who received the NCMP letter.
		Were there specific exclusion criteria:
		Not stated.
		Were there specific inclusion criteria:
		Not stated. For the Y W8 intervention parents were carers of overweight children (BMI >91st centile - UK 1990 reference charts) aged 8-13.
		Motivation / referral of participants:
		Unclear; selected by PCT and
			minutes. Each interview was recorded and transcribed to enable an accurate assessment of views.
			Key themes (with illustrative quotes if available) relevant to this review:
			Key themes identified in respect of the Y W8 programme and weight management in general:
			Participants
			Barriers:
			• Lack of acceptance of weight problem.
			• Negative expectations/apprehension regarding programme.
			• Individual and family factors inhibit take-up.
			• Lack of parental support.
			• Low motivation.
			• Lack of awareness of LWMP by health professionals.
			• Inconvenient scheduling.
			• Negative views of the intervention venue.
			• Provider discontinuity.
			• Not recognising or accepting child is overweight or obese.
			• Misc_boring intervention.
			• Misc_belief can manage weight without LWMP.
			Enablers:
			• Perception of improved weight and healthy lifestyle outcome.
			• Perception of improved confidence and self esteem.
			• Motivated by weight loss goals.
			• Positive provider characteristics.
			• Parental support.
			• Family involvement in intervention.
			• User-tailored intervention.
			• Peer and group sessions.
			• Programme the right duration.
			• Provision of monitoring and feedback.
			• Post-intervention support wanted.
			• Suggestions for recruitment of users.
			• Misc_low or no financial cost.
			• Misc_parental weight loss or improved health behaviourduring intervention.
				representative of the full populations - Potentially enthusiasts.
				Evidence gaps and/or recommendations for future research:
				None.
				Funding sources:
				Not stated. The Y W8 intervention was funded by Sport England and Big Lottery.
				Applicable to UK? (if appropriate):
				Yes, UK based.

	specified): None specified. **How were the data collected:** • **What method(s):** In-depth telephone interviews. • **By whom:** Research Consultants (Ci Research, Wilmslow, Cheshire). • **What setting(s):** Community. • **When:** Attendees over a range of delivery periods: September 2006 to April 2009.	may have volunteered.		
Author and year: Cote 2004 **Country:** United States **Study design:** Survey using qualitative data collection but quantitative analysis. **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To examine the demographic, illness and quality of care determinants of service attrition in a paediatric obesity program, and to elucidate factors that may promote families return to care. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Telephone interviews covering sociodemographic variables and structured validated questionnaires. • **By whom:** Not given. • **What setting(s):** Participants were phoned in their home.	**Description of study participants**: 163 eligible parents (eligibility criteria of children who received treatment detailed below), 120 analysed. 55% white, 40% black, 3.3% bi-racial, 1.7% other. 39% earned >$40,000 and 89.2% had high school education or more. **What population were the sample recruited from:** Care givers of children enrolled in an obesity treatment program. **How were they recruited:** All consecutively enrolled patients during the study period. **How many participants were recruited:** 120. **Were there specific exclusion criteria:**	**Brief description of method and process of analysis:** Telephone interview giving structured questions including Children's Health Questionnaire Global health assessment, quality of care assessed using the Consumer Assessment of Health Plan Study survey and reasons for drop out (listed reasons rated on 3 point scale) and two open ended questions of additional reasons for leaving program and what the program could do to facilitate return. Descriptive analysis and multivariate analysis (logistic regression) were used to examine drop out and reasons for premature termination of program. **Key themes relevant to this review:** *Participants* Barriers: • Negative aspects of scheduling. • Misc_financial cost. Enablers: • Suggestions for improved scheduling.	**Limitations (author):** Attrition was conceptualized as a single category, and no attempt was made to analyse early vs. late drop outs. These may differ. The retrospective nature of this research relied heavily on post hoc interpretation of parent reported predictors. **Limitations (review team):** No information about the characteristics of those who did not take part. **Evidence gaps and/or recommendations for future research:** Techniques for re-engaging those who defect from service such as a phone call follow up and other interventions to encourage return. **Funding sources:**

	• **When:** January 1998 to September 2000.	**Were there specific inclusion criteria:** Children (aged 5-10 years) with a BMI > 95th centile, OR Adolescents (age 11-17) with over 100% of their ideal body weight or with BMI>95th centile and a medical complication associated with being overweight. **Motivation / referral of participants:** Enrolled in a paediatric obesity treatment program.		None given. **Applicable to UK?** (if appropriate): Possibly.
Author and year: Dhingra 2011 **Country:** Australia **Study design:** Telephone survey **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To combine adolescent demographic and health information and parent motivational measures to improve understanding of treatment initiation in adolescent overweight and obesity intervention. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not provided. **How were the data collected:** • **What method(s):** Telephone intake survey. • **By whom:** Study team. • **What setting(s):** Participants phoned in own home. • **When:** Not given.	**Description of study participants**: 349 parents called to register interest in participating in intervention study (eligibility criteria of children detailed below). **What population were the sample recruited from:** Parents calling to register an interest in participating in intervention for adolescent overweight or obesity. **How were they recruited:** Information about the study was circulated via the media, mail-outs to health professionals, flyers and snowball techniques, parents were asked to phone to register their interest. **How many participants were recruited:** 349. **Were there specific exclusion**	**Brief description of method and process of analysis:** Telephone survey used to assess adolescent demographic, health and parent motivation. A binomial logistic regression model was conducted with predictors entered in 3 blocks (demographics, health and parent motivation). **Key themes relevant to this review:** *Participants* Barriers: • Low parental motivation as barrier to joining LWMP. • Misc_existing children's health problem. • Not realising or recognising health problem.	**Limitations (author):** There is an absence of adolescent treatment motivation measures which would improve the predictive power of the model. Use of parent reported rather than measure height/weight. **Limitations (review team):** Not evident that the questions were validated or piloted. **Evidence gaps and/or recommendations for future research:** Use more comprehensive intake measures of constructs theoretically and empirically linked to treatment initiation and engagement. **Funding sources:** ATN Centre for Metabolic

		criteria: Experiencing physical or psychological problems likely to interfere with participation. **Were there specific inclusion criteria:** Parents of adolescents who were (i) 12-18 years old (ii) overweight or obese (iii) living with an adult prepared to be involved. **Motivation / referral of participants:** Self referral.		Fitness. **Applicable to UK?** (if appropriate): Yes.
Author and year: Dixey 2006 **Country:** UK **Study design:** Qualitative WATCH IT programme **Quality score: (inc external validity for surveys)** **–**	**What was/were the research questions:** To find out from parents what they thought about the programme, and in a more general sense to find out more about the role of parents in weight management. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None stated. **How were the data collected:** • **What method(s):** Focussed discussions. • **By whom:** Academic researchers. • **What setting(s):** Community. • **When:** Not stated. Est. 2003-2005.	**Description of study participants:** 24 volunteer 'parents' (parents, grandparents, step-parents, older siblings) of participants (demographics not reported) in the programme (demographics not reported). Leeds, UK. **What population were the sample recruited from:** Those collecting children from a programme residential weekend. **How were they recruited:** As above. **How many participants were recruited:** 24. **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:**	**Brief description of method and process of analysis:** 'Focussed discussions' - no detail provided re questions or methods. Data were tape-recorded, transcribed by a research assistant anonymised then analysed via the Ritchie and Spencer (1994) technique. The concept of trustworthiness (Lincoln and Gruba 1985) was used to reflect on the data by all three researchers. Data were considered separately and then discussed. The data were checked in subsequent encounters with children and parents and discussed with the workers for feedback and verification. **Key themes relevant to this review:** *Participants* Barriers: • Children and/or families' lack of awareness of LWMP preventing uptake. • Goal to improve health as incentive to joining LWMP. • Family members work against or sabotage weight management attempts. • Lack of parental support. • Low children's motivation as barrier to adhering to LWMP. Enablers: • Monitoring and feedback. • Group sessions with peers. • Group sessions with peers. • Intervention tailored to personal needs.	**Limitations (author):** None stated. **Limitations (review team):** Researchers recruited volunteers, asked the questions and analysed the data - risk of desirability bias (parents' wanting to please researchers)? Methods report results from focussed discussions with parents only. Abstract and results suggest focus groups and interviews with children as well as parents (possibly from the subsequent encounters but not clear. **Evidence gaps and/or recommendations for future research:** Further systematic study of child weight management programmes. **Funding sources:**

		None stated. **Motivation / referral of participants:** Volunteers (total number of potential participants unstated).	• Intervention tailored to age of children. • Goal to improve children's psychological wellbeing as incentive to join LWMP. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Children's motivation as facilitator to adherence.	Not stated. **Applicable to UK?** (if appropriate): Yes - UK based.
Author and year: Farnesi 2011 **Country:** Canada **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To explore the understanding of collaboration between clinicians working in the field of paediatric weight management and parents of overweight children. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Thematic analysis with constant comparative technique. **How were the data collected:** • **What method(s):** Focus group and interviews. • **By whom:** Primary author. • **What setting(s):** Clinicians were recruited through Alberta Health Services. • **When:** November 2008 to January 2010.	**Description of study participants**: Canada. 3 focus groups and 4 interviews. Clinicians – 13 female: 1 male. Mean clinical experience 12.3 years. Parents (eligibility criteria of children detailed below) – 12 female: 4 male, 13/16 – white, mean age 41, income >$60,000 8/12 (66%). **What population were the sample recruited from:** Clinicians providing multidisciplinary paediatric weight management care within Alberta Health Services Weight Wise programme were contacted. Parents of overweight children were recruited from the Paediatric Centre for Weight and Health. **How were they recruited:** Clinicians contacted by the study using a public email directory. **How many participants were recruited:** 14 clinicians and 16 parents. 12 clinicians and 8 parents participated.	**Brief description of method and process of analysis:** Purposeful sampling approach to identify and recruit clinicians in the field of paediatric weight management as well as parents of overweight children. Data collection and analysis were conducted concurrently. Data on collaborative experiences were collected via focus group or individual interview depending on participant preference and feasibility and were facilitated by the same researcher. Demographic data on participants was collected via survey (clinician) or child medical records. 3 focus groups (60 min in length) – 1 with parents (n=4) and two with clinicians (n=5 and n=7) using a semi-structured format. Clinical vignettes (real world examples) were piloted with a separate group of parents and were used to generate discussion during focus groups. Semi-structured interviews were conducted with 4 parents (3 in person and 1 phone). Interviews lasted 35 to 60 minutes. All data collection were audio-recorded, transcribed verbatim and merged into N-Vivo 8. Thematic analysis using data-driven codes line by line was used. Constant comparison analysis was used, recruitment and analysis continued until data saturation was achieved. **Key themes relevant to this review:** *Participants* Barriers: • Negative views of providers. • Negative aspects of scheduling. Enablers: • Goal setting and rewards. • Monitoring and feedback. • Positive views of providers.	**Limitations (author):** The study included a small sample size of clinicians and parents including members of the same family who may have had the same clinical experience. Sample size goal was not achieved. Additional interviews may have expanded the concepts identified or illuminated new ones. **Limitations (review team):** Not sure data saturation was reached. **Evidence gaps and/or recommendations for future research:** Explore elements of collaboration between clinicians providing family based weight management care in primary care. How weight status of clinicians and parents influences collaborations; perceptions and experiences of unmotivated or less interested parents. **Funding sources:** Women and Children's Health Research Institute (Edmonton, AB).

		Were there specific inclusion criteria: Clinicians had to have at least 6 months experience working in the field. Parents needed to have an overweight 8-12 year old child and be currently receiving weight management care. **Motivation / referral of participants:** None given.		Scholarships from the Province of Alberta and the Department of Paediatrics. Canadian Child Health Clinician Scientist Programme and Alberta Innovates-Health Solutions. **Applicable to UK?** (if appropriate): Yes.
Author and year: Gellar 2012 **Country:** United States **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **++**	**What was/were the research questions:** To gain insight into the needs and suggestions of stakeholders regarding the design and implementation of a nurse-delivered intervention for overweight and obese adolescents. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Social cognitive theory. **How were the data collected:** • **What method(s):** Focus group. • **By whom:** Trained interviewer. • **What setting(s):** USA; Community. • **When:** April 2008 and June 2008.	**Description of study participants:** 41 overweight or obese adolescents 15-18 (16.0) yrs, 46% female, 93% white; 17 parents, 94% female, 36-63 (45.6) yrs, 100% white; 13 nurses, 100% female, 46-60 (52.0) yrs, 100% white; 29 staff, 72% female, 24-58 (42.4) yrs, 100% white. **What population were the sample recruited from:** Nurses via Massachusetts Department of Public Health, School Health Unit from the entire state of Massachusetts and for other participants via 3 high schools located in central and western Massachusetts. **How were they recruited:** Adolescents, parents, and high school staff were recruited by word of mouth, direct contact, public address announcements during homeroom, and	**Brief description of method and process of analysis:** Focus groups were audio taped and transcribed verbatim. Theme instances related to the research aim were identified, coded, and sorted into theme categories. **Key themes relevant to this review:** *Participants* Barriers: • Lack of parental support. Enablers: • Family involvement in programme. • Suggestions for recruiting families. • Goal to improve factors related to social acceptance ('fitting in') as incentive to join LWMP. • Children's motivation as facilitator to adherence.	**Limitations (author):** Responses may be influenced by presence of peers, biased sample as volunteers; female bias in parent group, results may not be generalisable to: other states, males or other ethnic groups. **Limitations (review team):** No detail on duration of proposed intervention. **Evidence gaps and/or recommendations for future research:** Effect of parental involvement, strategies required as to how to approach and identify in a sensitive manner overweight or obese individuals. **Funding sources:** National Institute of Child Health. **Applicable to UK?** (if appropriate):

		advertisements posted on the school web site. **How many participants were recruited:** 100. **Were there specific exclusion criteria:** None. **Were there specific inclusion criteria:** Overweight or obsess adolescents and their parents. **Motivation / referral of participants:** Participants received $20 for participating in a focus group.		Possibly.
Author and year: Golley 2006 Golley 2007 **Country:** UK **Study design:** Process Evaluation **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** To evaluate the effectiveness of a parenting skills training in the treatment of overweight children. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None specified. **How were the data collected:** • **What method(s):** Satisfaction questionnaire. • **By whom:** Researchers. • **What setting(s):** Anonymous responses. • **When:** Completed at 6 months by intervention parents. Modified version completed at 12 months by Wait List	**Description of study participants:** 57/111 parents **What population were the sample recruited from:** Parents of overweight prepubertal children (eligibility criteria of children detailed below). **How were they recruited:** Via media publicity and school newsletters. **How many participants were recruited:** 10/37 randomised to parenting skills (P); 26/38 in parenting skills plus intensive lifestyle education (P+DA); 21/36 in WLC. **Were there specific exclusion criteria:** Parents. **Were there specific inclusion**	**Brief description of method and process of analysis:** 16 item satisfaction questionnaire adapted from a previous Triple-P programme for parents of children with behavioural problems with additional questions relating to lifestyle change and perceived barriers to program attendance and implementation. Likert scale, yes/no and multiple choice responses were entered into SPSS and summarised as frequencies. Open-ended questions coded under appropriate themes and summarised as frequencies. **Key themes relevant to this review:** *Participants* Barriers: • Negative aspects of scheduling. • Individual and family demands limit attendance and adherence to LWMP. • Misc_intervention had too much homework. Enablers: • Family involvement in programme. • Group sessions with peers. • Group sessions with peers. • Positive views of providers' approach. • Personal sustainment strategies.	**Limitations (author):** None noted. **Limitations (review team):** Little information on the development of programme-specific questions and whether they were tested. Responses from completer groups only reported. Little data from WLC survey responses. **Evidence gaps and/or recommendations for future research:** None stated. **Funding sources:** Australian Health Management Group Assistance to Health and Medical Research Fund. Australian National Health and Medical Research

	Control(WLC) parents focusing on satisfaction with study allocation and lifestyle changes made during wait list period.	**criteria:** Parents of overweight children (International Task Force definition); aged 6-9 years. **Motivation / referral of participants:** Self-referral.	• Professional support after the LWMP is wanted or perceived as helpful.	Council. **Applicable to UK?** (if appropriate): Yes likely.
Author and year: Gunn 2008 **Country:** Australia **Study design:** Survey **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** Why GPs became involved and the benefits they enjoyed from their involvement in the study? **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Survey sent at recruitment, 3-4 weeks later, 9-12 months later (on completion of trial). • **By whom:** By study team. • **What setting(s):** Sent to GP surgery. • **When:** At 3 time points, baseline, 3-4 months and study completion. Year not given.	**Description of study participants:** GPs. 18/29 had not participated in research project in previous year and 28/30 had no formal training in research methods. **What population were the sample recruited from:** GPs in Melbourne, Victoria in a large GP paediatric special interest group. **How were they recruited:** Letters of invitation. **How many participants were recruited:** 34 out of 598 invited. **Were there specific exclusion criteria:** None. **Were there specific inclusion criteria:** Member of GP paediatric special interest group. **Motivation / referral of participants:** None provided.	**Brief description of method and process of analysis:** Once recruited GPS sent survey which included 8 items. Some items included open questions as well as closed questions which required choosing from predetermined response categories. Responses from open ended questions were entered verbatim into a computer file and the statistical package SPSS for Windows (release 11.5) was used to calculate frequencies for precoded items. **Key themes relevant to this review:** *Participants* Enablers: • Good quality and content of written materials provided. *Providers* Enablers: • Professional skills and knowledge. • Collaborative team working within or between services.	**Limitations (author):** Some number of GPs interested in participating. Nonparticipants may have had different attitudes to research that those reported here. **Limitations (review team):** The GPs involved in the intervention were selected because they were interested in paediatric health and these may be a select bias group. **Evidence gaps and/or recommendations for future research:** Finding ways to support GP involvement in clinical research. **Funding sources:** Australian Health Ministers Advisory Council, NHMRC. **Applicable to UK?** (if appropriate): Yes.
Author and year: Gunnarsdottir 2011 **Country:**	**What was/were the research questions:** To investigate whether outcome from child obesity	**Description of study participants:** **What population were the sample recruited from:**	**Brief description of method and process of analysis:** Participants responded to the self-report baseline questionnaire using five-point Likert scale. Cronbach's α calculated for questions relating to each motivational variable (importance, confidence, readiness) and	**Limitations (author):** Analyses were limited only to those who began the programme (84 of the 91

Iceland **Study design:** Correlation study **Quality score: (inc external validity for surveys)** **+**	treatment is affected by parental level of motivation for treatment at baseline. Specifically the predictive power of the three components of motivation (importance, confidence, readiness) was tested for four outcomes: (i) treatment completion; (ii) early treatment response (weight loss assessed at week 5); (iii) post-treatment weight loss) and (iv) weight loss at 1-year follow up. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** No theory stated but based on empirical evidence for baseline motivation influence on outcomes. **How were the data collected:** • **What method(s):** Self report questionnaire at intervention baseline. • **By whom:** Self report by participants. Researcher performing analysis unstated but authors were University-based. • **What setting(s):** Children's medical centre. • **When:** 2007-2008.	Attendees to a 12-week [Epstein's] family based behavioural treatment programme for obesity. Reykjavik, Iceland. **How were they recruited:** All attending families. **How many participants were recruited:** 84 obese children and a parent. 55% boys. Mean age 11.4 (SD 1.4, range 7.5 to 13.6). Majority of parents were mothers (88%); mean parental age 40.3 (SD 5.4, range 28 to 54) and mean BMI 31.1 (SD 6.5, range 18.8 to 47.8). **Were there specific exclusion criteria:** "Mental retardation"; obesity with a medical cause, significant dietary or exercise restrictions, another family member participating in a weight control program. **Were there specific inclusion criteria:** Child; Obese. **Motivation / referral of participants:** Study explored base-line motivation as predictor of outcomes. 61 families (73%) completed treatment and attended 1-year follow up.	questions with α ≥ 0.80 were combined for data analysis. Means and SDs for those completing treatment and drop-outs compared by independent t-tests. Associations between predictor and outcome variables assessed by Pearson's correlation coefficient, independent samples t-tests and chi-squared tests. Predictor variables for standard multiple regression and direct logistic regressions were chosen based on significant correlations for prediction of the four outcomes (see research questions). **Key themes relevant to this review:** *Participants* Barriers: • Individual and family demands. Enablers: • Perception that LWMP will result in improved health.	families who attended the introductory session). Study was underpowered. **Limitations (review team):** Not possible to tell if recruited families were representative of all families with an obese child. No control group. Weight outcomes only collected for completers. **Evidence gaps and/or recommendations for future research:** Investigating the role of child motivation for treatment. **Funding sources:** Landspitali University Hospital Research Fund, Icelandic Research Fund for Graduate Students, University of Iceland Research Fund, Thorvaldssen Society. **Applicable to UK?** (if appropriate): Based in Iceland – potentially applicable to the UK.
Author and year: Hester 2010	**What was/were the research questions:**	**Description of study participants:**	**Brief description of method and process of analysis:** All interviews were audio recorded and transcribed verbatim and	**Limitations (author):** Type of participant

Country: UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **++**	To uncover in-depth qualitative accounts of intervention impact from obese young people during a period of lifestyle change after attending a residential weight-loss camp. Questions around: returning home, living life, personal transitions, possible selves, change and exception talk. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not specified. **How were the data collected:** • **What method(s):** Semi-structured interviews. • **By whom:** First author. • **What setting(s):** UK; Community. • **When:** Not provided but 9 month post-camp interview.	5 of 15 participants from stage 2 (3 month interview), 3 male, 2 female (no other demographics provided). Aged 14-16. **What population were the sample recruited from:** CIC-UK attendees who attended a reunion camp. **How were they recruited:** By second author who was counsellor on the camp staff. **How many participants were recruited:** 5/15 from stage2 (3month post-camp interview). **Were there specific exclusion criteria:** None. **Were there specific inclusion criteria:** None. **Motivation / referral of participants:** Not provided.	subjected to an inductive analysis procedure. **Key themes relevant to this review:** *Participants* Barriers: • Lack of relevance or difficulty in implementing interventions and/or knowledge learned into home life. • Perception of negative impact on health, wellbeing or health behaviour. • Family members work against or sabotage weight management attempts. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Perception of positive improvements in children's health behaviour. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Perception that LWMP leads to children making friends. • Misc_school achievement improvements.	cognitively more negative than healthy weight counterparts. **Limitations (review team):** Relies on retrospective recall, small sample, only those who attended reunion camp interviewed. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** Active lifestyles Ph.D. bursary from Carnegie Faculty of Sport and Education at Leeds Metropolitan University. **Applicable to UK?** (if appropriate): Yes.
Author and year: Holt 2005 **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** Examined children's perceptions of attending a residential paediatric weight-loss camp including: (1) goals and aspirations; (2) pre-camp concerns; (3) experiences during the first few weeks of camp; (4) experiences during the rest of the camp; (5) evaluation of strengths and weaknesses of camp. **What theoretical approach (e.g. grounded theory, IPA)**	**Description of study participants:** 6 females, 9 males; mean age 13.65yrs (SD 1.46); Caucasian. **What population were the sample recruited from:** Camp attendees who attended a reunion camp. **How were they recruited:** By second author who was counsellor on the camp staff. **How many participants were recruited:**	**Brief description of method and process of analysis:** Transcribed verbatim and subjected to an inductive analysis procedure. **Key themes relevant to this review:** *Participants* Barriers: • Misconceptions/negative expectations inhibiting uptake of programme. • Children's general apprehension about joining. • Misc_children felt homesick. Enablers: • Group sessions with peers. • Encouraging tone of providers.	**Limitations (author):** Relies on retrospective recall, small sample, only those who attended reunion camp interviewed. **Limitations (review team):** None. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** National Heart Research Fund.

	does the study take (if specified): Not given. **How were the data collected:** • **What method(s):** Semi-structured interview, 30-45 min. • **By whom:** First author (male). • **What setting(s):** UK; Community. • **When:** 2002.	15/27 and chosen to represent breadth of experiences. **Were there specific exclusion criteria:** None. **Were there specific inclusion criteria:** None. **Motivation / referral of participants:** Not provided.	• Positive views of providers' approach. • Support from providers is highly regarded. • Goal to improve health as incentive to joining LWMP. • Goal to improve children's psychological wellbeing as incentive to join LWMP. • Goal of making friends as incentive to join LWMP. • Goal to improve factors related to social non-acceptance ('reduced bullying') as incentive to join LWMP. • Misc_Intervention promotes self-responsibility.	**Applicable to UK?** (if appropriate): Yes.
Author and year: Jinks 2010 **Country:** UK **Study design:** Qualitative evaluation **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To collect in-depth information of the participants' views concerning the programme's effectiveness and how the programme could be improved. No other details. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Small group discussions, one-to-one interviews, email contact and telephone conversations with team. • **By whom:** No details given. • **What setting(s):** A range of methods including face-to-face, telephone, email. • **When:** Not given.	**Description of study participants**: No details on demographics. Aged 7-14. **What population were the sample recruited from:** (Obesity Support for Children And Relatives) OSCAR team and family members of participants. **How were they recruited:** All OSCAR team members. Analysis of family plans. No details on recruitment for qualitative evaluation. **How many participants were recruited:** Families : 5. OSCAR team: 6. **Were there specific exclusion criteria:** None given. **Were there specific inclusion criteria:** None given.	**Brief description of method and process of analysis:** Group discussions and one-to-one interviews were recorded and transcribed verbatim. Thematic analysis was used. **Key themes relevant to this review:** *Participants* Barriers: • Perception intervention too short. • Monitoring and feedback. • Negative aspects of scheduling. • Negative views of the venue. • Health professionals' not referring, or making inappropriate referrals, to LWMP. • Inappropriate referrals to LWMP by non health professionals. • Low children's motivation as barrier to joining LWMP. • Low parental motivation as barrier to adhering to LWMP. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Family involvement in programme. • Monitoring and feedback (directly opposes above). • Group sessions with peers. • Suggestions for improved scheduling. • Suggestions for recruiting families. • Perception that LWMP will result in improved health.	**Limitations (author):** Small samples sizes and low response rates of the families willing to take part in the evaluation. This affects generalisability. Length of time after the program finished and the data collection commenced may result on some of the detail of the program being forgotten. **Limitations (review team):** Low sample size for parents, little description of how the data was collected or the participant's demographics. **Evidence gaps and/or recommendations for future research:** Longitudinal evaluation of the family's health gains. **Funding sources:** NHS East Lancashire. **Applicable to UK?** (if

		Motivation / referral of participants: Referred by healthcare professionals.	• Perception that LWMP improves children's weight loss. • Children's motivation as facilitator to adherence. • Personal sustainment strategies. *Providers* Barriers: • Professionals faced staffing and time constraints for delivering LWMPs. • Poor planning and coordination of LWMP sessions. • Problems with smooth organisation of sessions. Enablers: • Plan an exit strategy to help weight maintenance post intervention. • Professionals had sufficient staffing and time for delivering LWMPs (directly opposes above). • Collaborative team working within or between services.	appropriate): Yes.
Author and year: Jones 2010 **Country:** UK **Study design:** Process Evaluation (HIKCUPS) **Quality score: (inc external validity for surveys):** PE HIKCUPS intervention (Okely 2010; Review 1) received a **++** score	**What was/were the research questions:** To (a) Outline findings from process outcome data of the HIKCUPS study; (b) Inform the design and development of future research interventions and practice in the management of child obesity. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None specified. **How were the data collected:** • **What method(s):** Facilitator evaluations, independent session observation, attendance records, parent questionnaires. • **By whom:** Not stated but authors were University researchers. • **What setting(s):**	**Description of study participants:** 165 overweight pre-pubertal children aged 5-9yrs. F =97 (59%); Mean BMI z-score 2.8; plus their parents. Australia. **What population were the sample recruited from:** From local communities. **How were they recruited:** Primarily through print media and advertisements placed in school newsletters. **How many participants were recruited:** 165. **Were there specific exclusion criteria:** Extreme obesity (body mass index z-score >4); known syndromal obesity; chronic illness; following therapeutic diet; taking medications	**Brief description of method and process of analysis:** Facilitator-completed session evaluations (physical educators, primary school teachers, dieticians). Independent observation (no details of observer) for three sessions in each program, randomly chosen (3 sessions x 4 cohorts x3 programs). Data on % attendance and follow-up, and assessment of compliance with activities. Final session parental questionnaire with 4-point Likert scale responses. Mean values compared using Mann-Whitney tests (for site comparisons), Kruskal-Wallis tests (for group comparisons) and chi-square tests. 67 (51%) of the parent questionnaires relating to the dietary modification program were returned and 68 (49%) for the physical activity program. **Key themes relevant to this review:** *Participants* Barriers: • Provider reports difficulty in delivering sessions to groups with of broad ages. • Negative aspects of scheduling. Enablers: • User-tailored intervention. • Positive views of providers' approach. • Positive views of scheduling. • Suggestions for improved scheduling.	**Limitations (author):** Un-validated data collection instruments. Only 50% response rate to parent questionnaires. **Limitations (review team):** None. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** National health and Medical Research Council of Australia. Individual fellowships to researcher from the National Health and Medical Research Council Career Development Award Fellowship and the Heart Foundation of Australia. [From Okely 2010, Review 1].

	Community. • **When:** Not stated.	associated with weight gain or long-term steroids. **Were there specific inclusion criteria:** Overweight or obese children according to International Obesity Task Force cut points; aged 5.5 to 9.9 years; pre-pubertal (Tanner Stage I) and generally healthy. **Motivation / referral of participants:** Volunteers (responding to advertisement).		**Applicable to UK?** (if appropriate): Yes.
Author and year: Kitscha 2009 **Country:** Canada **Study design:** Qualitative survey **Quality score: (inc external validity for surveys)** –	**What was/were the research questions:** Assessment of the reasons for patient non-return to an individual weight management counselling for physician-referred children and adolescents. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Grounded theory approach. **How were the data collected:** • **What method(s):** One of two semi-structured qualitative telephone surveys one directed to parents/carers, the other to children/ adolescents (nb: responses only from parents/carers). • **By whom:** Not stated. • **What setting(s):** Community setting, Canada. • **When:**	**Description of study participants:** Parents/carers of non-returning patients. **What population were the sample recruited from:** Parents/carers of children and adolescents aged 2-17 years who did not return for follow-up appointments within a four month period (ie did not attend >2 appointments). **How were they recruited:** Identified via retrospective chart review. **How many participants were recruited:** 21 parents/carers, no children/adolescents. **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:** Parents/carers or children/	**Brief description of method and process of analysis:** Survey content evaluated for face and content validity by five paediatric registered dieticians involved in the programme. Co-investigator transcribe key informant interviews for thematic analysis Coding undertaken independently by two investigators until saturation was attained. **Key themes relevant to this review:** *Participants* Barriers: • Negative aspects of scheduling. • Negative views of the venue. • Low children's motivation as barrier to adhering to LWMP. • Barriers to partaking in post-intervention professional support. • Misc_users' unforeseen circumstances preventing follow-up attendance. • Misc_intervention perceived to be boring. Enablers: • Family involvement in programme. • Goal setting and rewards. • Good quality and content of written materials. • Intervention tailored to personal needs. • Positive views of the venue. • Confidence that weight management will be sustained after the	**Limitations (author):** None stated. **Limitations (review team):** No information from children or adolescents. Limited data on survey development, validity and trialling and data collection. **Evidence gaps and/or recommendations for future research:** None stated. **Funding sources:** None stated. **Applicable to UK?** (if appropriate): Yes, community-based programme in Canada.

	Not stated.	adolescents aged 2-17 years in a paediatric weight management programme who did not return for follow-up appointments in a within a four month period (i.e. did not attend >2 appointments). **Motivation / referral of participants:** Not stated.	LWMP without professional support.	
Author and year: Kornman 2010 **Country:** Australia **Study design:** Process evaluation (preferences for e-contact) Loozit intervention **Quality score: (inc external validity for surveys)** PE Loozit intervention (Review 1, Nguyen 2012) received a **++** score	**What was/were the research questions:** To examine adolescent and facilitator participation in the first 10 months of an obesity management intervention including electronic contact via e-mail and short message service (SMS) communication. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Social cognitive theory (Nguyen 2012). **How were the data collected:** • **What method(s):** Content analysis of e-contact messages and 12-month participant satisfaction questionnaires. • **By whom:** University and health service researchers. • **What setting(s):** Community. • **When:** Commencing mid 2006.	**Description of study participants:** Overweight adolescents aged 13-16; 45% male, mean age 14.3 (SD 0.9). Mean 2 month BMI z score 2.0 (SD 0.4), a modest reduction of 0.04 (0.07) from baseline. Plus their parents. Sydney, Australia. Participants' mean Socio-economic Index for Areas' Index of Relative Socioeconomic Advantage and Disadvantage was 1,053 (SD 84) compared to the Sydney metropolitan mean of 1,089. **What population were the sample recruited from:** Community. **How were they recruited:** Recruitment mainly through the media, schools, health professionals, and community organisations. **How many participants were recruited:** 41 (the group randomised to e-contact).	**Brief description of method and process of analysis:** As part of the intervention, adolescents were sent brief semi-personalised (including adolescent's first name) health messages approximately monthly from 2-12 months during the intervention. The overall reply rate was 22%. An analysis of the messages was completed with data entry by one researcher, checked by another for accuracy. In addition, analysis of 12-month satisfaction questionnaires with response rate = 95% (39 responses). **Key themes relevant to this review:** *Participants* Enablers: • Most adolescents related e-contact as 'somewhat helpful'. Most adolescents (n=17) found SMS messages somewhat helpful, 10 found them very helpful and 7 found them to be unhelpful. Equivalent responses for e-mail messages were 16, 13 and 4. • Healthy eating messages (42% response), booster session reinforcement (34%) and those concluding with 'please reply' elicited the highest reply rates (32% compared to 5% for statement messages) and authors surmised these message types should be included in future adolescent e-contact interventions.	**Limitations (author):** Small sample size. Other methods of assessing the true extent of adolescent engagement should also have been employed. **Limitations (review team): Evidence gaps and/or recommendations for future research:** Further exploration of e-contact interventions including adolescents' expectations and recommendations for improvement. **Funding sources:** University of Sydney Research and Development Grant; National Health and Medical Research Council Biomedical Postgraduate Scholarship. **Applicable to UK?** (if appropriate): Yes – community based in Australia.

		Were there specific exclusion criteria: Secondary causes of obesity; significant medical illness. **Were there specific inclusion criteria:** a) Overweight to moderately obese (BMI *z* score range 1.0-2.5) but otherwise healthy, b) age 13 to 16 years, c) available to attend the initial group sessions with one of their parents or caregivers on specified days, and d) ability to access a landline telephone and e-mail and/or a mobile telephone. **Motivation / referral of participants:** Probably mixed – some responses to advertisement, others probably encouraged.		
Author and year: Monastra 2005 **Country:** United States **Study design:** Survey **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** Evaluate short term outcomes of the LEAP intervention. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Survey at the beginning and at the end of the 8 week programme. Qualitative data (open ended questions) gathered from exit survey in last session. • **By whom:**	**Description of study participants:** 44 parents and 27 children completed exit survey (age range of children participating in program 7-14yrs). USA, Primary care. **What population were the sample recruited from:** Not described. **How were they recruited:** Not described. **How many participants were recruited:** 107 of 174 enrolled, completed the programme. **Were there specific exclusion**	**Brief description of method and process of analysis:** Children and parents completed surveys within close proximity. Numbered responses were used for analysis a change in pre and post was calculated as pre score minus post score. **Key themes relevant to this review:** *Participants* Barriers: • Misc_friends or peers a bad influence on weight management. Enablers: • Would like a longer programme. • Good quality and content of written materials. • Group sessions with peers. • Non-judgemental tone of providers. • Goal to improve health as incentive to joining LWMP.	**Limitations (author):** Non-controlled and relied on outcome for those who participated and completed the programme. **Limitations (review team):** No information about those who did not take part or did not complete. **Evidence gaps and/or recommendations for future research:** Further research is needed to evaluate long term effects of the intervention. **Funding sources:** U.S. Department of Agriculture Food Stamp

	Research team. • **What setting(s):** Final study session. • **When:** Final study session. Years 2002 to 2004.	**criteria:** None given. **Were there specific inclusion criteria:** None given. **Motivation / referral of participants:** None given.		Program. **Applicable to UK?** (if appropriate): Yes.
Author and year: Morinder 2011 **Country:** Sweden **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **++**	**What was/were the research questions:** Awareness and individual consequences of obesity, referral to and participation in obesity treatment, personal goals and motives for weight reduction and participation in obesity treatment, possibility to influence one's own treatment, turning points in the treatment process, treatment recommendations and compliance, self-esteem and participation in obesity treatment, thoughts about potential adult body weight. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Semi-structured interviews between 19 and 60 min. • **By whom:** First author. • **What setting(s):** Sweden; Clinic. • **When:** Not provided.	**Description of study participants:** 18 obese adolescents, 12 girls, age 14-16, BMI 25-47.4 kgm^{-2}. **What population were the sample recruited from:** Children and adolescents referred to paediatric obesity clinic. **How were they recruited:** Nominated by professional within clinic (n=40). **How many participants were recruited:** 18. **Were there specific exclusion criteria:** Defined syndromes, developmental delay and or neuropsychiatric diagnoses. **Were there specific inclusion criteria:** Classified as obese, aged 14-16yrs, ability to speak and understand Swedish and registered at the clinic for at least 6 months. **Motivation / referral of participants:** Referred.	**Brief description of method and process of analysis:** Phenomenographic approach, interviews were audio taped, transcribed verbatim and categories identified. **Key themes relevant to this review:** *Participants* Barriers: • Goal setting. • Monitoring and feedback. • Negative views of providers. • Negative views of the venue. • Lack of relevance or difficulty in implementing interventions and/or knowledge learned into home life. • Perception of negative impact on health, wellbeing or health behaviour. • Low children's motivation as barrier to adhering to LWMP. • Not realising or recognising child is overweight or obese. • Misc_feels shame in attending LWMP. Enablers: • Monitoring and feedback. • Group sessions with peers. • Positive views of providers' approach. • Intervention promotes self-responsibility. • Intervention tailored to personal needs. • Goal to improve health as incentive to joining LWMP. • Goal to improve children's psychological wellbeing as incentive to join LWMP. • Children's motivation as facilitator to adherence.	**Limitations (author):** Participants may have been more positive than decliners. **Limitations (review team):** More females. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** Swedish Research Council, Swedish Council for Working Life and Social Research, Health Care Sciences Postgraduate School, Karolinkska Institute. **Applicable to UK?** (if appropriate): Possibly.

Author and year: Murtagh 2006 **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To identify the physical and psychological levers and barriers to weight loss experienced by obese children using qualitative techniques. Children encouraged to discuss views on following: When they first became aware of their weight problem. What instigated the process of behavioural change. The presence of barriers to behavioural change. Whether attempts to lose weight had been made previously. Why they felt the need to lose weight. What helps them lose weight. What makes it difficult to lose weight. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Interviews and focus groups. • **By whom:** Focus groups conducted by primary researcher and health promotion specialist. • **What setting(s):** UK; Community. • **When:** Not provided.	**Description of study participants:** UK; Community; 14 boys and 16 girls; aged 8-14 yrs; mean BMI 3.09 (0.49); **What population were the sample recruited from:** Obese children aged 7-15yrs attending a NHS funded weight-loss programme for >3 months. No detail of how many attended. **How were they recruited:** Information packs provided to every family enrolled in the programme. **How many participants were recruited:** 20 (selected on the basis of availability to take part in a interviews and focus groups). **Were there specific exclusion criteria:** None provided. **Were there specific inclusion criteria:** None provided. **Motivation / referral of participants:** No details.	**Brief description of method and process of analysis:** Each child was given option of having a parent or guardian present at the time of recording, only one child indicated the need for this. Three subjects were unable to attend a focus group meeting. Individual interviews lasted approximately 20 min using open-ended questions. Three focus groups were formed consisting of 6–8 children per group, and lasted approximately 40 min. The issues raised and discussed through the personal interviews were revisited. All data were tape-recorded, semi transcribed, anonymised and then analysed using the framework analysis technique as set out by Ritchie and Spencer. **Key themes (with illustrative quotes if available) relevant to this review:** *Participants* Barriers: • Parental delay in taking action or failing to recognise the problem. • Time frame (to see effects) perceived as too long. Enablers: • Wanting to fit in – to avoid bullying. • Wanting to fit in – to be like everyone else.	**Limitations (author):** May not reflect views of unengaged obese child. **Limitations (review team):** Not clear if transcripts coded by more than one researcher or if data fed back to participants. No details on whether participants referred to programme so unable to ascertain their motivation. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** Not provided. **Applicable to UK?** (if appropriate): Yes.

Author and year: Owen 2009 **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **++**	**What was/were the research questions:** To identify which aspects of management they thought helped or hindered weight loss, and thus gain insight into how a childhood obesity clinic should be developed in primary care. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Thematic patterns. **How were the data collected:** • **What method(s):** Short in-depth interviews. • **By whom:** Lead author (SEO). • **What setting(s):** In hospital with 4 conducted in participants own home and one over the telephone. • **When:** July 2007 to Feb 2008.	**Description of study participants**: 21 Adults and 11 children; 17 Mothers, 4 Fathers, 1 Grandmother, 6 Girls and 5 boys (ages of children 7-18; 2 aged <10 and 9 aged 11-18). **What population were the sample recruited from:** Children attending a hospital based clinic. **How were they recruited:** Not given. **How many participants were recruited:** 21 Adults and 11 children. **Were there specific exclusion criteria:** None given. **Were there specific inclusion criteria:** None given. **Motivation / referral of participants:** None given.	**Brief description of method and process of analysis:** The interviewer was not known to the interviewees and attended the clinic only to do interviews. Two separate interview guides were used: one for the parents and another for the children. Both guides included questions about referral, descriptions and feelings about appointments, suggestions for improvement and reasons for non-attendance. The parent guide included clinic accessibility and thoughts about hospital setting. Parent interviews lasted 20 minutes and child 14 minutes. All were recorded and transcribed and read by 2 members of the team. Transcripts were imported into ATLAS and electronically coded. Comparisons were made between accounts given by successful and unsuccessful patients/parents, girls and boys, children aged 5-10 and those aged 11-18. **Key themes relevant to this review:** *Participants* Barriers: • Negative aspects of scheduling. • Intervention does not promote self-responsibility. • Lack of relevance or difficulty in implementing interventions and/or knowledge learned into home life. • Family members work against or sabotage weight management attempts. Enablers: • Goal setting and rewards. • Encouraging tone of providers. • Positive views of providers' approach. • Providers act as different voice of authority to parents. • Suggestions for improved scheduling. • Children's motivation as facilitator to adherence.	**Limitations (author):** The purposive sampling strategy could limit generalisability. Participants were only recruited from one clinic further limiting generalisability. The individuals interviewed had acknowledged that their child had a weight problem and had sought help; many parents with overweight children do not realize their child is overweight. **Limitations (review team):** No explanation of refusal rate or how certain groups were chosen (consecutive, randomized). No information on interview schedule. **Evidence gaps and/or recommendations for future research:** An evidence base for service development will be needed if the involvement of primary care is to be effective and cost effective. **Funding sources:** School of General Practice at the Severn Deanery and the South West GP Trust. **Applicable to UK?** (if appropriate): Yes.
Author and year:	**What was/were the research**	**Description of study**	**Brief description of method and process of analysis:**	**Limitations (author):**

Perry 2008 **Country:** Australia **Study design:** Qualitative PEACH **Quality score: (inc external validity for surveys)** ++	**questions:** To assess how the programme was implemented and how far it satisfied participant expectations [pp. 147 onwards]. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None stated. **How were the data collected:** • **What method(s):** Anonymous questionnaires at the end of the 4 week parent skills training component; Semi structured interviews at the 12 month time point. Process data (recruitment, retention, programme fidelity). • **By whom:** Unclear. • **What setting(s):** Community. • **When:** Recruited May 2004 and March 2005 in Adelaide and June 2004 and April 2005 in Sydney.	**participants:** Parents (children aged 8.2yrs ±1.2). **What population were the sample recruited from:** Parents in the PEACH programme. **How were they recruited:** **How many participants were recruited:** 122 respondents to questionnaire; 95 semi structured interviews (50 from Adelaide, 45 from Sydney). **Were there specific exclusion criteria:** **Were there specific inclusion criteria:** **Motivation / referral of participants:** Volunteers to media recruitment.	Tick boxes for satisfaction ratings within questionnaire and open ended responses. Extensive thematic analysis of first and second level barrier and facilitator themes from the interviews. **Key themes relevant to this review:** *Participants* Barriers: • Individual and family demands limit attendance and adherence to LWMP. Enablers: • Family involvement in programme.	Possibility of selection bias. **Limitations (review team):** Only 10% interviews coded in duplicate, no feedback mentioned. **Evidence gaps and/or recommendations for future research:** Future study designs would be strengthened by the selection of a limited number of specific and sensitive outcome and impact evaluation indicators to result in a more clearly articulated definition of effectiveness. **Funding sources:** National Health and Medical Research Council Project Grant, National Health Foods and the National Health and Medical Research Council. **Applicable to UK?** (if appropriate): Yes, similar setting. Australia.
Author and year: Pescud 2010 **Country:** Australia **Study design:** Qualitative **Quality score: (inc external validity for surveys)** +	**What was/were the research questions:** A wide range of topics was discussed including motivations to commence the program, perceptions of the program, and any problems that may have been experienced. Interviewees were also asked to reflect upon the positive and negative aspects of the	**Description of study participants:** 11 parent-child pairs, 10 parents were mothers and one a step-father, 5 boys and 6 girls; aged 7-11; 2 children normal weight, 2 children overweight and 7 obese. Of the participating children, one had completed the 8 week program, two had	**Brief description of method and process of analysis:** Interviews were digitally recorded, recordings transcribed verbatim and imported into NVivo8 for coding and analysis. Content codes were created to cover the topics listed in the interview guide and emergent concepts that were identified during analysis. **Key themes relevant to this review:** *Participants* Barriers:	**Limitations (author):** Results may not be representative, boredom not addressed in interviews. **Limitations (review team):** Small sample, lack of demographic details. **Evidence gaps and/or recommendations for**

	program and to describe any barriers to their on-going participation in similar programs in the future. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Semi-structured interview. • **By whom:** Interviewer not attached to program. • **What setting(s):** Australia; community. • **When:** Not provided.	completed the 16 week program, and eight had completed the 24 week program. **What population were the sample recruited from:** Via local GP and adverts in local newspaper. **How were they recruited:** Invitation to those who completed the program. Interviewees were each reimbursed $AU50 for their time. **How many participants were recruited:** 11/31. **Were there specific exclusion criteria:** None. **Were there specific inclusion criteria:** None. **Motivation / referral of participants:** No detail but likely mixed as some recruited via newspaper adverts and others via local GP.	• Negative views of the venue. Enablers: • Family involvement in programme. • Positive views of the venue. • Goal to improve children's psychological wellbeing as incentive to join LWMP. • Perception that LWMP improves children's psychological wellbeing.	**future research:** None. **Funding sources:** Telstra Foundation. **Applicable to UK?** (if appropriate): Possibly.
Author and year: Pinard 2012 **Country:** United States **Study design:** Pilot study including interviews and questionnaires **Quality score: (inc external validity for**	**What was/were the research questions:** To explore the feasibility and effectiveness of family based intervention to treat childhood obesity. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Grounded theory (for	**Description of study participants**: Physicians, lay leaders and parents. No demographic measures available on qualitative participants. Families who participated in the intervention were 54% Black, 42% White, 4% Hispanic. Mean age of parent 39.5 years, 14/26 parents	**Brief description of method and process of analysis:** Interviews followed a semi-structured format with grounded theory approach and took 30 minutes on average. They were recorded and transcribed verbatim, then coded for meaning by multiple coders (lead authors and trained graduate research assistants). Each interview was member checked by the interviewee to confirm meaning. Questionnaires to parents included; The Kid's Eating Disorders Survey, The Pediatric Quality of Life 4.0 Generic Core Scale, Parent physical activity using he Rapid Assessment Physical activity scale, parent health behaviours, parent quality of life.	**Limitations (author):** The intervention had a small sample size and no control group. **Limitations (review team):** It is unclear how many interviews were conducted and how many in each group. There is no estimate of how

surveys) –	interviews). **How were the data collected:** • **What method(s):** Interviews. • **By whom:** Lead author. • **What setting(s):** Location where group and measurement session were held. • **When:** Not given.	unemployed (eligibility criteria of children detailed below). **What population were the sample recruited from:** Professionals and parents involved in the Smart Choices for Health Families intervention. **How were they recruited:** A physician recommendation to Medicaid-eligible patients. Electronic records were used to identify eligible parents/children. The physicians and lay leaders were those involved in delivering the program. **How many participants were recruited:** 26 out of 177 eligible parents participated in the intervention. No mention of number of interviews conducted. **Were there specific exclusion criteria:** Patients with genetic/metabolic growth syndromes. Given medications that would alter appetite. No criteria specifically for qualitative work. **Were there specific inclusion criteria:** Attending Carilion Clinic Children's Hospital in Virginia. Aged 8-12. BMI between 90th and 99th centile. Parents English speaking.	**Key themes relevant to this review:** *Participants* Enablers: • Providers valued the collaborative multidisciplinary team working.	many in each group expressed the opinions given in the results. **Evidence gaps and/or recommendations for future research:** The difficulty recruiting highlights a need for further work in recruitment. **Funding sources:** Carilion Clinic Research Acceleration Program. **Applicable to UK?** (if appropriate): Yes.

		Telephone access. Lived within geographic area. No criteria specifically for qualitative work. Moti**vation / referral of participants:** The physicians and lay leaders had formed a group together to develop a local sustainable treatment for childhood obesity. Therefore, proactive motivated individuals.		
Author and year: Pittson 2011 **Country:** UK **Study design:** Qualitative / Intervention mapping **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** To develop a family based programme using intervention mapping to ensure the intervention developed was grounded in theory. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Intervention mapping in six steps. **How were the data collected:** • **What method(s):** Focus groups, interviews, literature review, and pilot intervention. • **By whom:** Not given. • **What setting(s):** Focus groups were conducted in participating schools. Setting of interviews was not given. • **When:** Not given.	**Description of study participants**: Children aged 11-13yrs. **What population were the sample recruited from:** Focus group - Six secondary schools for 47 randomly selected children. Interviews - Parents of potential programme participants. **How were they recruited:** Not given. **How many participants were recruited:** 47 children. 6 parents. **Were there specific exclusion criteria:** None given. **Were there specific inclusion criteria:** Participating school. Parent of potential programme participant (overweight child).	**Brief description of method and process of analysis:** Focus groups were conducted in six secondary schools among randomly selected pupils aged 11-13 (n=47). Examining nutritional knowledge, attitudes towards healthy eating and exercise, current lifestyles and ideas for a weight management programme for families. Each session was transcribed and analysed. Six semi structured interviews were conducted with parents of potential programme participants to identify the factors parents regards as contribution to their child weight issue, explore barriers they face and elements they regard as important. Literature review of studies describing family focused interventions for weight management. Piloting program with 12 families. **Key themes relevant to this review:** *Participants* Barriers: Enablers: • Involvement of families in intervention. • LWMP perceived to improve psychological wellbeing. • Misc_goal to improve sports ability as incentive for joining LWMP. • Misc_goal to improve sports ability as incentive for joining LWMP.	**Limitations (author):** None given. **Limitations (review team):** Source population and method of selection not described. No piloting or validation of findings by described. **Evidence gaps and/or recommendations for future research:** To explore the psychological processes affected by this intervention and which of the measurements predicts the most beneficial effects in children's BMI. Using Abraham and Micheie's Taxonomy of Behaviour change Techniques to analyse the content of the manual and categorise the intervention content. **Funding sources:** Sport England and the Big

		Motivation / referral of participants: None given.		Lottery. **Applicable to UK?** (if appropriate): Yes.
Author and year: Pittson unpub **Country:** UK **Study design:** Process Evaluation Y W8 **Quality score: (inc external validity for surveys)** N/A Mixed methods process evaluation The intervention quality score was assessed as – (Pittson 2010, 2011)	**What was/were the research questions:** Not stated. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not specified. **How were the data collected:** • **What method(s):** Attendance register; session evaluations by mentors; Graffiti wall for families; post-programme (week 12) evaluation form for families (separate forms for children and parents developed by programme developer); and semi structured interviews with six randomly selected parents – held in their homes; Questionnaires for non-starters/non-completers by mail/telephone. • **By whom:** Not stated. • **What setting(s):** Community: Y W8 programmes and home (completion of questionnaires). • **When:** Not stated.	**Description of study participants:** No details other than for parent interviewees. Six female parents responding about five female and two male attendees (age range 8-13). **What population were the sample recruited from:** Mentors to, and families attending, Y W8 programmes. **How were they recruited:** Various – methods. **How many participants were recruited:** 87 evaluation forms from children and 75 from parents. 6 parent interviews. 3 non-starter (of 7 contacted) and 15 non-completer (of 26) questionnaires. **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:** Overweight children (BMI >91st centile - UK 1990 reference charts) aged 8-13. At least one parent/carer to attend. **Motivation / referral of participants:** Self-referral or heath	**Brief description of method and process of analysis:** Attendance register kept; Mentor evaluations checked to ensure fidelity to programme; Themes and illustrative quotes extracted from evaluation forms and interviews. **Key themes relevant to this review:** *Participants* Barriers: • Negative views of scheduling as disincentive to join programme. • Low parental motivation as barrier to joining LWMP. • Low parental motivation as barrier to adhering to LWMP. • Concerns that weight management won't be sustained after the LWMP without professional support. • Misc_intervention perceived to be boring. Enablers: • Goal setting and rewards. • Group sessions with peers. • Confidence in sustaining weight management post-intervention. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Parents' motivation as facilitator to uptake of LWMP. • Misc_intervention perceived to have improved weight loss.	**Limitations (author):** None stated. **Limitations (review team):** None **Evidence gaps and/or recommendations for future research:** None stated. **Funding sources:** Not stated but the Y W8 programme was funded by Sport England and Big Lottery. **Applicable to UK?** (if appropriate): Yes, UK based.

		professional referral (GP, school nurse).		
Author and year: Robertson 2009 **Country:** UK **Study design:** Mixed methods process evaluation *Families for Health* (Review 1 – Robertson 2008, 2011) **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** Re this review: [p.111] To evaluate the programme's acceptability to families. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Behavioural change, but no specific theory (p.166). **How were the data collected:** • **What method(s):** Mixed methods. • **By whom:** Largely by the author; a University -based researcher. • **What setting(s):** Leisure Centre, Coventry. • **When:** 2005 onwards.	**Description of study participants:** Overweight or obese children aged 7-13 years (18 girls, 9 boys) and their parents. **What population were the sample recruited from:** Community in Coventry, UK. **How were they recruited:** *First programme.* GP practice recruitment, and on an opportunistic basis by other health professionals; Radio and newspaper adverts direct to families (once clear that HPs were not able to recruit sufficient numbers). *Second programme:* Primary schools (when clear above methods unable to recruit enough for both programmes). **How many participants were recruited:** 27 children from 21 families. **Were there specific exclusion criteria:** Underlying medical cause of obesity or eating disorder; Families unable to speak English. **Were there specific inclusion criteria:** Children aged 7-11; ≥91st centile for BMI. Living with parent or guardian willing to attend. **Motivation / referral of**	**Brief description of method and process of analysis:** [p.110] A comprehensive process evaluation using an adaptation of the framework developed by Linnan and Steckler (2002). [p.113] Qualitative and quantitative data were collected throughout the study. All data were integrated via triangulation. Numerous data collection methods [p. 127,148]: Questionnaires, weekly evaluations (slightly modified from standard forms used in the Family Links programme) to end of programme and 1:1 interviews with parents; Questionnaires and 'natural group' interviews with children; Facilitator weekly feedback and 1:1 interviews. Purposive sampling to select parents. Interview data analysed via the Ritchie and Spencer (1993) framework approach. Transcripts indexed and coded by two people. **Key themes relevant to this review:** *Participants* Barriers: • Negative aspects of scheduling. • Negative views of the venue. Enablers: • Intervention the right length. • Family involvement in programme. • Monitoring and feedback. • Group sessions with peers. • Good facilitation of group sessions with peers. • Positive views of providers' approach. • Suggestions for improved scheduling. • Positive views of the venue. • Suggestions for recruiting families. • Would like a longer programme (opposes above). • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Misc_intervention promotes self-responsibility. • Professional support wanted post-intervention. *Providers*	**Limitations (author):** Interviews with parents should have been at a longer time point than immediately post-intervention. **Limitations (review team):** The author was closely involved with the development and piloting of the intervention so there is a risk that evaluation not independent; However multiple methods used to collect data. **Evidence gaps and/or recommendations for future research:** An RCT evaluation of the *Families for Health* intervention. Further exploration of recruitment issues. **Funding sources:** Department of Health Public Health Initiative for Novice Researchers. **Applicable to UK?** (if appropriate): Yes, UK based.

		participants: Attendance rate was 62%, with 18 (67%) children completing the programme.	Enablers: • Misc_have separate parent and child sessions.	
Author and year: Sahota 2010 [unpub] **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** To identify key knowledge and skills required by professionals to deliver the behavioural aspects (of child weight management programmes) effectively and identify any tools (resources, checklists, frameworks and training) to facilitate delivery. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** 30-50 minute telephone interviews with 'key providers' of child weight management programmes in the UK, using a schedule developed by the expert panel and project steering group at NHS Scotland. • **By whom:** Not stated. Report authors were University based researchers. • **What setting(s):** Community – telephone. • **When:** Not stated.	**Description of study participants:** Professionals delivering programmes from medical paediatric services, clinical psychology, academic research, therapy/counselling and sports/exercise. Representing: The Traffic Light programme; The SCOTT programme; Watch It; Mend (Mind, Exercise, Nutrition, Do it); Carnegie Weight Management Programmes; Shine; GOALS (Getting Our Active Lifestyles Started). Children's ages ranged from 2-18. **What population were the sample recruited from:** As above. **How were they recruited:** Recommendations from the project expert advisory and steering groups. **How many participants were recruited:** 6 (from 7 approached). **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:** None stated. **Motivation / referral of participants:**	**Brief description of method and process of analysis:** Brief telephone interviews to cross check findings with the results of a literature search. Framework analysis. No other information. **Key themes relevant to this review:** *Providers* Barriers: • Lack of awareness of LWMPs among professionals in other areas. Enablers: • Goal setting. • Provider characteristics. • Misc_large number of behavioural techniques needed as every family/child has different needs and responds to different approaches. • Misc_mentoring for providers. Other • Misc_different views on whether trained lay people or professionals should deliver interventions.	**Limitations (author):** More in-depth information by longer face-to-face interviews or observation would have enhanced the findings. **Limitations (review team):** Very small sample - one per programme - and may not be representative. Schedule developed for project and does not appear to have been piloted/validated. **Evidence gaps and/or recommendations for future research:** More in-depth information by longer face-to-face interviews or observation. **Funding sources:** NHS Health Scotland. **Applicable to UK?** (if appropriate): Yes, UK based.

		All involved in delivering programmes.		
Author and year: Staniford 2011 **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **++**	**What was/were the research questions:** To explore key stakeholders perspectives towards childhood obesity treatment and intervention design. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Frame work approach. **How were the data collected:** • **What method(s):** Semi structured interviews. • **By whom:** Not given. • **What setting(s):** Parents and children - during intervention sessions. Health professionals - a setting and time convenient for them, typically work place during office hours. • **When:** Interviews with children and parents: March 2008-June 2008.	**Description of study participants**: 9 health professionals, 10 children aged 7-13 years attending MEND, 7 parents of child attending an obesity treatment intervention. **What population were the sample recruited from:** Community based childhood obesity prevention interventions. **How were they recruited:** Not given. **How many participants were recruited:** 26. **Were there specific exclusion criteria:** Not given. **Were there specific inclusion criteria:** Purposive sampling. **Motivation / referral of participants:** None given.	**Brief description of method and process of analysis:** Twenty six stakeholders were recruited using purposive sampling; semi-structured interviews were conducted using a framework approach. Interviews lasted 25-35 minutes, were recorded and transcribed verbatim and imported to QSR NVivo 7 with identifiers removed. Framework analysis technique was used. Peer consultation took place between all authors and member checks were conducted to allow participants to verify the analysis represented an accurate account of their views. **Key themes relevant to this review:** *Participants* Barriers: • Family members work against or sabotage weight management attempts. • Concerns that weight management won't be sustained after the LWMP without professional support. • Barriers to partaking in post-intervention professional support. • Lack of professional support after the intervention. Enablers: • Family involvement in programme. • Group sessions with peers. • Intervention promotes self-responsibility. • Intervention tailored to personal needs. • Intervention tailored to age of children. • Positive views of the venue. • Goal to improve health as incentive to joining LWMP. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Goal to improve factors related to social non-acceptance ('reduced bullying') as incentive to join LWMP. • Parental support provided for children while attempting weight management. • Professional support after the LWMP is wanted or perceived as helpful. *Providers*	**Limitations (author):** Due to the open ended nature it is possible that the researchers own views conflicts and prejudices may have influenced the themes. Although a purposeful sample was gathered, the actual make up of the sample was partly determined by convenience. There was no access to participants who had dropped out and they may have offered different views. **Limitations (review team):** Non responders and how participants selected was not described. **Evidence gaps and/or recommendations for future research:** Qualitative research is needed to uncover quality and fidelity issues, research with children who have dropped out of treatment could offer unique insights in enhancing future treatments. Studies should explore feasible and cost effective strategies to support families in maintaining behavioural changes.

			• Parents not realising their role as agents of change. Enablers: • Group sessions with peers. • Family involvement in programme. • Train participants to be responsible for change after the intervention. • Suggestions for venues. • Importance of post-intervention support.	Future research should consider the efficacy of incorporating maintenance and relapse prevention strategies. **Funding sources:** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. **Applicable to UK?** (if appropriate): Yes.
Author and year: Stewart 2008a and Stewart 2008b **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To gain insight into the journey of parents of obese children to and through treatment (2008a) and explore behavioural change techniques in paediatric obesity (2008b). **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Framework methods. **How were the data collected:** • **What method(s):** In-depth interviews. • **By whom:** Two authors (LS and JC). • **What setting(s):** Not given. • **When:** Six months after treatment finished/ 12 months after the start of treatment.	**Description of study participants**: 14 mothers, 2 fathers and 1 grandmother. 9 Mid-high socio-economic statuses and 8 low SES, 9 male children and 8 female children; children aged 5-11yrs. **What population were the sample recruited from:** Principle carers of primary school aged children who had taken part in a dietetic intervention. **How were they recruited:** Not described. **How many participants were recruited:** 17 out of 79. **Were there specific exclusion criteria:** None given. **Were there specific inclusion criteria:** None given. **Motivation / referral of**	**Brief description of method and process of analysis:** In-depth interviews having used purposive sampling to have successful/unsuccessful treatment, younger (5-8 age) and older (9-11) child, location, gender of child, family situation (lone parent, carer). Interviews took place 12 months after the start of treatment. Interviews lasted 50-80 minutes and followed a topic guide with no set questions. Peer consultation took place with all authors on coding of transcripts, charting and mapping and final interpretations. **Key themes relevant to this review:** *Participants* Barriers: • Negative views of providers. • Intervention does not promote self-responsibility. • Family members work against or sabotage weight management attempts. • Not recognising child is obese or overweight. Enablers: • To have a longer programme. • Goal setting and rewards. • Realistic approach to goal setting. • Monitoring and feedback. • Providers act as different voice of authority to parents. • Support from providers is highly regarded.	**Limitations (author):** Resource limitations did not allow us to interview more parents or to further explore our findings with other groups. This means findings are 'tentative'. **Limitations (review team):** No description of piloting or valuation by the interviewee. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** Scottish Executive Health Department Chief Scientist Office. **Applicable to UK?** (if appropriate): Yes.

		participants: Recruited into study.	• Intervention promotes self-responsibility. • Health professionals' raising awareness of, or referring to, LWMP. • Perception of positive improvements in children's health behaviour. • Goal to improve children's psychological wellbeing as incentive to join LWMP. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP leads to children making friends. • Family support for children while attempting weight management. • Professional support after the LWMP is wanted or perceived as helpful. • Misc_promoting self responsibility.	
Author and year: Truby 2010 **Country:** Australia **Study design:** Process Evaluation **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** To describe the characteristics of adolescents seeking treatment for obesity via the 'Eat Smart' feasibility study. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None specified. **How were the data collected:** • **What method(s):** Questions asked of parents of participants and non-participants in the programme. • **By whom:** Not stated. Authors were University researchers or from a Nutrition company. • **What setting(s):** Tertiary Children's Hospital; Dietician led. • **When:** Programme commenced March 2007.	**Description of study participants:** 66.7% female. Mean age 13.2 (SD 1.9). Median tanner stage 4 for girls and 3 for boys. Mean BMI 33.1 (SD 6.2). Mean BMI z score 2.23 (SD 0.3). 60% with obesity related comorbidities. 81% Caucasian. **What population were the sample recruited from:** Queensland, Australia. **How were they recruited:** General practice referral. **How many participants were recruited:** 30. **Were there specific exclusion criteria:** Taking insulin sensitisers or metformin, stimulants or psychotropic medication. Taking drugs known to alter body composition or metabolism. With syndromal or other obesity of known cause.	**Brief description of method and process of analysis:** No methodology provided. Appears to be questions asked of participants and non-participants plus some linkage of baseline characteristics to participation/non-participation. **Key themes relevant to this review:** *Participants* Barriers: • Negative views of scheduling as disincentive to join programme. • Low children's motivation as barrier to joining LWMP. Enablers: • Goal to improve factors related to social non-acceptance ('reduced bullying') as incentive to join LWMP.	**Limitations (author):** None stated. **Limitations (review team):** No methodology and thus risk of major bias. Industry sponsorship? **Evidence gaps and/or recommendations for future research:** **Funding sources:** Pharmacy Health Solutions. **Applicable to UK?** (if appropriate): Likely. Based in Australia.

		Were there specific inclusion criteria: 10-17 years. BMI >90th centile. Subjects wishing to lose weight. Parent/guardian able to give informed consent in English. **Motivation / referral of participants:** Subjects motivated to lose weight (inclusion criterion).		
Author and year: Twiddy 2012 **Country:** UK **Study design:** Qualitative WATCH-IT **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** To explore the views of parents, children and health trainers to identify issues which can inform the development of more effective (childhood weight management) programmes. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Social cognitive theory; self-determination theory. **How were the data collected:** • **What method(s):** In-depth semi-structured interviews with families and focus groups with trainers. • **By whom:** Not stated. Authors were University researchers and do not appear to have directly delivered the programme. • **What setting(s):** Community. • **When:** Not stated.	**Description of study participants:** Families of children (aged 8-18) involved in WATCH-IT: 56.5% male; mean BMI z score change range = -0.66 to +0.42; 78% White British; 17% mothers with no education, 48% to GCSE level, and 17% to degree level. Children aged 8-18yrs. **What population were the sample recruited from:** Families who had previously attended (or were currently attending) WATCH-IT. Trainers. **How were they recruited:** Purposive sampling from the WATCH-IT database to ensure a wide range of families; Focus groups held in Leeds & Birmingham for trainers. **How many participants were recruited:** 23 families (25 parents, 1 grandparent – the child was present in 10 interviews); 10 trainers in two focus groups;	**Brief description of method and process of analysis:** Interviews and focus groups were based on topic guides devised for the study. Recorded and transcribed verbatim. Coding developed by two independent researchers then modified through consensus to develop themes. Then NVivo used to manage data. **Key themes relevant to this review:** *Participants* Barriers: • Negative views of providers. • Intervention does not promote self-responsibility. • Perception of negative impact on health, wellbeing or health behaviour. • Lack of parental support for children while attempting weight management. • Parents not realising their role as agents of change. • Family members work against or sabotage weight management attempts. • Low children's motivation as barrier to joining LWMP. • Low children's motivation as barrier to adhering to LWMP. Enablers: • Family involvement in programme. • Goal setting and rewards. • Continuity of providers. • Intervention tailored to personal needs. • Intervention tailored to age of children. • Goal to improve children's psychological wellbeing as incentive to join LWMP.	**Limitations (author):** Only one child who did not lose weight was happy to be interviewed so the voice of these children not represented. **Limitations (review team):** Role of researcher not fully described. No explicit triangulation of results. **Evidence gaps and/or recommendations for future research:** Further research is needed to investigate the potential value of tailoring packages according to the needs of the parents and child. **Funding sources:** NHS Leeds UK. **Applicable to UK?** (if appropriate): Yes – based in the UK.

		one in Leeds (4 trainers), one in Birmingham (6 trainers). **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:** As described above. **Motivation / referral of participants:** Families received a £15 voucher for the interview.	• Perception that LWMP improves children's psychological wellbeing. • Goal to improve factors related to social acceptance ('fitting in') as incentive to join LWMP. • Parental support provided for children while attempting weight management (directly opposes above). • Children's motivation as facilitator to adherence. • Parents' motivation as facilitator to uptake of LWMP. • Parents' motivation as facilitator to adherence of LWMP.	
Author and year: Tyler 2008 **Country:** United states **Study design:** Qualitative within process evaluation Children's Health and Weight Study (CHeWS) **Quality score: (inc external validity for surveys)** +	**What was/were the research questions:** To examine the collaborative negotiation process to help low-income families improve lifestyle and weight-related health indicators in their overweight children. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None specified. **How were the data collected:** • **What method(s):** Structured field notes and audiotapes of parent-child-provider interactions during intervention visits. • **By whom:** Experienced advanced practice nurses trained in motivational interviewing. • **What setting(s):** School. • **When:** Not stated.	**Description of study participants:** Families of overweight children. Av. age 9.5. 55% female. 91% Mexican American. 94% eligible for Medicaid; 74% eligible for free or reduced-cost lunch. **What population were the sample recruited from:** Primary-care school-based clinic in central Texas - data from 111 intervention visits (four during first 12 weeks plus booster at week 25). **How were they recruited:** Announcements in school newsletters and local newspapers, flyers in clinic and school nurses' offices, response cards to parents during clinic visits. **How many participants were recruited:** 35 child-parent pairs. **Were there specific exclusion criteria:**	**Brief description of method and process of analysis:** Field notes based on a structured field note guide (111 visits); audiotaped randomly selected intervention visits (36 visits). Coding sheet developed. Audiotapes reviewed until redundancy and categorical saturation occurred, by two independent members of the research team. Discrepancies discussed and resolved. Data then reduced to themes. **Key themes relevant to this review:** *Participants* Enablers: • Goal setting.	**Limitations (author):** Small number of predominently Mexican-American low income families. **Limitations (review team):** Generalisability to UK population uncertain. **Evidence gaps and/or recommendations for future research:** **Funding sources:** National Institute of Nursing Research. **Applicable to UK?** (if appropriate): Might be limited given specific population group.

		Were there specific inclusion criteria: Children aged 8-12 with BMI ≥ 95th centile; parent or guardian able to speak and understand English; participants had transportation to the clinic and resided in school district. **Motivation / referral of participants:** Self referred.		
Author and year: Watson 2008 GOALS: Getting Our Active Lifestyles Started **Country:** UK **Study design:** Process evaluation **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** In addition to investigating impact, a) To explore the acceptability of the GOALS intervention for Sandwell families and the key factors that supported their behaviour change (if applicable). b) To explore the feasibility of delivering and implementing GOALS in Sandwell, with a view to sustainable partnership working allowing development of the intervention to meet local need. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None stated. **How were the data collected:** • **What method(s):** Separate adult and child focus groups during Week 6 and adult feedback questionnaire at end of intervention.	**Description of study participants:** Seven obese children aged 8-14 and their families. **What population were the sample recruited from:** Community in Sandwell. **How were they recruited:** Referral by paediatricians, child and adult mental health services (CAMHS) and local schools. **How many participants were recruited:** 7 families - data for 6. **Were there specific exclusion criteria:** None specified. **Were there specific inclusion criteria:** Obese (>98th centile) children aged 8-14 and their families. **Motivation/referral of participants:** No information on motivation. Referred by health	**Brief description of method and process of analysis:** All focus groups were transcribed verbatim and analysed inductively using the qualitative data analysis package NVivo. **Key themes relevant to this review:** *Participants* Barriers: • Perception intervention too short. • Negative aspects of scheduling. • Health professionals' lack of awareness of LWMP preventing uptake. Enablers: • Family involvement in programme. • Goal setting and rewards. • Good quality and content of written materials provided. • Group sessions with peers. • Positive views of providers' approach. • Suggestions for improved scheduling. • Intervention tailored to personal needs. • Intervention tailored to age of children. • Positive views of the venue. • Health professionals' not referring, or making inappropriate referrals, to LWMP. • Suggestions for recruiting families. • Perception of positive improvements in children's health behaviour. • Goal to improve health as incentive to joining LWMP .	**Limitations (author):** No limitations identified (Watson 2008). **Limitations (review team):** No data on how questions for focus groups or questionnaire were developed or tested. Limited information on how data were analysed. Author was lead researcher and project manager for the GOALS programme. No post-intervention data. **Evidence gaps and/or recommendations for future research:** None stated. **Funding sources:** States that GOALS is funded via the Working Neighbourhood Fund. No information on whether Sandwell PCT contributed. **Applicable to UK?** (if appropriate): Yes – conducted in the UK.

	Also, focus group for operational and strategic staff. Post-intervention, PCT staff and partners invited to comment by email. • **By whom:** Sandwell PCT food and physical activity teams with training and support from Liverpool GOALS team). • **What setting(s):** Community. Sandwell. • **When:** April-August 2008.	professionals.	• Goal to improve children's psychological wellbeing as incentive to join LWMP. • Perception that LWMP improves children's psychological wellbeing. • Perception that LWMP improves children's weight loss. *Providers* Barriers: • Professionals faced staffing and time constraints for delivering LWMPs. • Poor planning and coordination of LWMP sessions. • Problems with smooth organisation of sessions. Enablers: • Plan an exit strategy to help weight maintenance post intervention. • Professional skills and knowledge. • Collaborative team working within or between services.	
Author and year: Watson 2012a GOALS: Getting Our Active Lifestyles Started **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** **+**	**What was/were the research questions:** In addition to assessing efficacy of intervention (Study 1): Study 2 (how does GOALS work?) qualitatively explores experiences of families Study 3 (who does GOALS work for in the long-term and how?) follows up families 3-5 years after attending GOALS to explore actual and perceived outcomes, parental psychosocial factors associated with positive outcomes and the processes involved in sustaining long-term behavioural change. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Transtheoretical Model of Health Behaviour Change (Prochaska & Velicer, 1997).	**Description of study participants:** Overweight or obese children aged 4-16 and their families. 71% from 10% most deprived neighbourhoods (Index of Multiple Deprivation 2007). **What population were the sample recruited from:** Community in Liverpool. **How were they recruited:** Referral from Liverpool *Sports*Linx and health professionals. Self-referral in response to promotional activities (press articles, posters, leaflets etc.). **How many participants were recruited:** Study 2: Sample included 36 families (34 parents, 39 children [19 m]), 33 went on to complete the intervention. Study 3: 15/113 families	**Brief description of method and process of analysis:** Study 2: Focus groups piloted, using different interactive techniques. All recorded, transcribed verbatim and anonymised. Preliminary deductive analysis undertaken by a researcher not previously involved. Pre-determined categories based on focus group questions used to produce "pen profiles" but as this did not allow for examination of between-participant interaction, original transcripts revisited and thematic analysis undertaken by principal researcher. Where there was crossover in constructs, the preliminary deductive coding was used as a credibility check of the themes that emerged. All data analysed using NVivo. Study 3: Semi-structured interviews using guide. Interview data managed as above. Throughout the analysis process, researcher met with supervisory team to triangulate emerging concepts and discuss the most appropriate methods for presentation. Two stages of analysis: psychosocial profiles of families and cross-case processes of change. **Key themes relevant to this review:** *Participants* Barriers: • Quality and content of written materials provided. • Negative views of group sessions with peers. • Negative views of the venue. • Children and/or families' lack of awareness of LWMP preventing	**Limitations (author):** Author had researcher-practitioner role: Project Manager (inc staff and operational management plus developing some behaviour change sessions) and Principal Researcher for GOALS. Considerable diversity between groups and use of multiple facilitators. Facilitators all staff which may have solicited socially acceptable answers. Issues around power imbalance where adults run child focus groups. **Limitations (review team):** Limited information for families who did not complete the programme. Study 3 had convenience sample with potential for

	How were the data collected: • **What method(s):** Study 2: 9 adult and 9 child focus groups separately during Week 6 (2-9 participants per group). Study 3: 15 semi-structured interviews conducted in family homes with parents. • **By whom:** Study 2: Groups facilitated by principal researcher or member of GOALS staff. All facilitators known to participants and experienced in conducting group discussions with children and/or parents. Principal researcher provided facilitators with training and a topic guide. Study 3: Principal researcher. • **What setting(s):** Community - Liverpool – primary and secondary schools. • **When:** Study 2: Nov 2007 – March 2009; Study 3: Nov 2011 – Jan 2012.	invited to take part (14/15 had completed programme). **Were there specific exclusion criteria:** Children with obesity caused or exacerbated through medical conditions or syndromes, severe learning disabilities, or without baseline data. **Were there specific inclusion criteria:** Families with children aged 4-16 years who were overweight or obese (BMI > 91st centile - UK 1990 BMI reference charts). No children excluded on medical grounds or with learning disabilities. **Motivation / referral of participants:** Mix of referral methods. Data on motivation collected as part of study.	uptake. • Perception of negative impact on health, wellbeing or health behaviour. • Misconceptions/negative expectations inhibiting uptake of programme. • Individual and family demands limit attendance and adherence to LWMP. • Low parental motivation as barrier to joining LWMP. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Would like a longer programme. • Family involvement in programme. • Goal setting and rewards. • Realistic approach to goal setting. • Good quality and content of written materials provided (directly opposes above). • Monitoring and feedback. • Group sessions with peers. • Encouraging tone of providers. • Non-judgemental tone of providers. • Positive views of providers' approach. • Providers act as different voice of authority to parents. • Positive views of scheduling. • Suggestions for improved scheduling. • Positive views of the venue. • Health professionals' raising awareness of, or referring to, LWMP. • Perception of positive improvements in children's health behaviour. • Perception that LWMP improves children's psychological wellbeing. • Confidence that weight management will be sustained after the LWMP without professional support (directly opposes above). • Personal sustainment strategies. • Professional support after the LWMP is wanted or perceived as helpful. *Providers* Barriers: • Language used disliked by participants and acts as a barrier to joining programme.	selection bias. **Evidence gaps and/or recommendations for future research:** To explore the association between authoritative parenting style and long-term positive outcomes following childhood obesity treatment. To explore children's perceptions of change process and elucidate influences of child and family environment factors. **Funding sources:** Liverpool City Council via the Neighbourhood Renewal Fund and Working Neighbourhood Fund. **Applicable to UK?** (if appropriate): Yes – conducted in the UK.

Author and year: Watson 2012b Watson 2011, GOALS: Getting Our Active Lifestyles Started **Country:** UK **Study design:** Process evaluation **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** To explore the feasibility of the Getting Our Active Lifestyles Started (GOALS) intervention as a model for treating childhood obesity in Blackburn with Darwen. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None stated. **How were the data collected:** • **What method(s):** Training workshop evaluation for Blackburn GOALS staff. Separate adult (n=2 from 1 family), child (n=3 from 1 family) and staff (n=4) focus groups plus adult feedback questionnaire for other completing family. All at end of intervention. • **By whom:** Focus groups: researchers at Liverpool John Moores University (LJMU). Feedback sheet: Blackburn GOALS staff. Workshop Evaluation: LJMU researchers. • **What setting(s):** Community - Blackburn PCT. • **When:** March-July 2011.	**Description of study participants:** Five overweight children aged 8-12 and their families. Two families completed programme. **What population were the sample recruited from:** Community in Blackburn. **How were they recruited:** Self-referral in response to press articles, posters, leaflets, health events etc. **How many participants were recruited:** 5 families with children aged 8-12. **Were there specific exclusion criteria:** None stated. **Were there specific inclusion criteria:** Overweight (>91st centile) children aged 8-12 and their families. **Motivation / referral of participants:** Self-referral in response to press articles, posters, leaflets, health events etc.	**Brief description of method and process of analysis:** Topics for the parent and child focus groups were expectations of GOALS, positives, areas for improvement, changes made, facilitators for change, barriers to change and feelings about the future. Topics for the staff focus group were outcomes of GOALS, delivery positives, delivery challenges, recruitment, training and support and running GOALS again. All data from focus groups transcribed verbatim and arranged into themes based on focus group topics. **Key themes relevant to this review:** *Participants* Barriers: • Perception intervention too long and hinders uptake of and adherence to LWMP. • Goal setting. • Poor quality and content of written materials provided. • Monitoring and feedback. • Group sessions with peers. • Negative views of providers. • Misconceptions/negative expectations inhibiting uptake of programme. • Low parental motivation as barrier to adhering to LWMP. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Would like a longer programme (directly opposes above). • Family involvement in programme. • Goal setting and rewards (directly opposes above). • Monitoring and feedback (directly opposes above). • Group sessions with peers. • Health professionals' raising awareness of, or referring to, LWMP. • Suggestions for recruiting families. • Perception of positive improvements in children's health behaviour. • Goal to improve children's psychological wellbeing as incentive to join LWMP. *Providers* Barriers:	**Limitations (author):** Initial evaluations in small groups generally from more affluent neighbourhoods. Most of the feedback came from one family (Watson 2011). All post-intervention data from one of the two families who completed the intervention. May not be generalisable. [Watson 2012b). **Limitations (review team):** As noted above – only one family attended focus group. Plus, no data on how questions for focus groups or questionnaire were developed or tested. Limited information on how data were analysed. Author was lead researcher and project manager for the GOALS programme. No post-intervention data. **Evidence gaps and/or recommendations for future research:** None stated. **Funding sources:** Blackburn with Darwen PCT. Liverpool PCT. **Applicable to UK?** (if appropriate): Yes – conducted in the UK.

			• Poor planning and coordination of LWMP sessions. Enablers: • Professional skills and knowledge. • Enjoyment of programme delivery.	
Author and year: Withnall 2008 **Country:** UK **Study design:** Qualitative **Quality score: (inc external validity for surveys)** –	**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 (e.g. grounded theory, IPA) does the study take (if specified):** None stated. **How were the data collected:** • **What method(s):** Interviews, focus groups and workshops. • **By whom:** Authors are from a research consultancy. • **What setting(s):** Community. • **When:** April 2008.	**Description of study participants:** Children and young people aged 5-18 and parents/carers/family. **What population were the sample recruited from:** Dewsbury and Huddersfield, UK and attending or had attended in the last 12 months one of the following weight management programmes: • MEND • Young PALS • COBWEBS **How were they recruited:** Convenience samples of attendees to a programme on the days the groups were held. **How many participants were recruited:** Circa 45 children/young people; 25 parents. **Were there specific exclusion criteria:** No. **Were there specific inclusion criteria:** No. **Motivation / referral of participants:** Financial incentive provided	**Brief description of method and process of analysis:** Interviews, focus groups and workshops based on flexible discussion guides (provided in appendix of report). No other information provided re methodology. **Key themes relevant to this review:** *Participants* Barriers: • Children and/or families' lack of awareness of LWMP preventing uptake. • Misconceptions/negative expectations inhibiting uptake of programme. Enablers: • Perception of positive improvements in children's health behaviour. • Perception that LWMP improves children's psychological wellbeing. • Goal of making friends as incentive to join LWMP. • Perception that LWMP leads to children making friends. • Goal to improve factors related to social acceptance ('fitting in') as incentive to join LWMP. • Goal to improve factors related to social non-acceptance ('reduced bullying') as incentive to join LWMP. • Professional support after the LWMP is wanted or perceived as helpful. *Providers* Barriers: • Language used disliked by participants and acts as a barrier to joining programme.	**Limitations (author):** **Limitations (review team):** Almost no methodological details so not possible to tell how themes were derived. **Evidence gaps and/or recommendations for future research:** **Funding sources:** Kirkless Primary Care Trust. **Applicable to UK?** (if appropriate): Yes.

		to participants and weight management programmes to take part in the qualitative studies.		
Author and year: Wolman 2008 **Country:** UK **Study design:** Process evaluation Fighting Fit Tots [based on MEND] **Quality score: (inc external validity for surveys)** PE	**What was/were the research questions:** Not stated. A general discussion paper around recruitment difficulties to the programme. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** Not specified. **How were the data collected:** • **What method(s):** Anecdotal. • **By whom:** Not stated. Authors are NHS staff and University researchers. • **What setting(s):** Community. • **When:** Not stated.	**Description of study participants:** 13 referred/self-referred parent-child pairs for the programme (eligibility criteria of children detailed below). **What population were the sample recruited from:** Community. **How were they recruited:** Self referral via marketing (flyers at GP practices, Sure Start newsletter, community and health centres; and direct referral from health professionals. **How many participants were recruited:** 3/13 pairs. **Were there specific exclusion criteria:** None specified. **Were there specific inclusion criteria:** Child 18-30 months old; BMI >91st centile; One or both parents obese. **Motivation / referral of participants:** Probably mixed given recruitment methods.	**Brief description of method and process of analysis:** Anecdotal evidence from the 13 parent-child pair, 10 of whom did not meet inclusion criteria or were not able to attend on the date offered. No methodology provided. The programme evaluation covered overweight and normal weight toddlers thus only the barriers to recruitment data (for overweight toddlers) were relevant to this review. **Key themes relevant to this review:** *Participants* Barriers: • Perception intervention too long and hinders adherence to LWMP. • Health professionals' not referring, or making inappropriate referrals, to LWMP. Enablers: • Suggestions for recruiting families. *Providers* Barriers: • Professionals faced staffing and time constraints for delivering LWMPs. Enablers:	**Limitations (author):** None stated. **Limitations (review team):** Not a formal evaluation - essentially a discussion document. **Evidence gaps and/or recommendations for future research:** None. **Funding sources:** Sure Start, Lambeth, London UK. **Applicable to UK?** (if appropriate): Yes, UK based. NB Following poor recruitment, as described in this paper, the programme was opened to normal weight as well as overweight toddlers so the intervention evaluation did not meet the inclusion criteria for review 1.
Author and year: Woolford 2010 **Country:** United States	**What was/were the research questions:** Is there a paediatric multidisciplinary weight	**Description of study participants:** Paediatricians (PD) 57% female, 39% > 20yrs since	**Brief description of method and process of analysis:** Self-administered, 2 page, 30-item survey with fixed responses. Survey instrument was piloted with a convenience sample of physicians to ensure clarity and ease administration. Cover letter explaining the purpose of the	**Limitations (author):** Response rate was 67%, may not be generalisable. **Limitations (review team):**

Study design: Cross-sectional **Quality score: (inc external validity for surveys)** **+**	management program available to which you can refer patients? If yes, have you ever referred adolescents to this program? Respondents were subsequently asked to assume that a paediatric multidisciplinary weight management centre was available to them and note if they would not refer, may refer or would refer an obese adolescent in the following situations: on first diagnosing a patient as obese; after management in the primary care setting for ≥ 6 months; after participation in a group program; if the patient has been obese for more than 2 to 3 yrs; at any point if requested by the patient or parent; when you don't know what else to do to help your patient lose weight. **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Self-administered, 2 pages, 30-item survey with fixed responses. • **By whom:** Investigators. • **What setting(s):** USA; Clinic. • **When:** Spring 2007.	graduation; family physicians (FP) 37% female, 34% > 20yrs since graduation. **What population were the sample recruited from:** National random sample of 375 paediatricians and 375 family physicians drawn from the American Medical Association Masterfile. **How were they recruited:** Random sample were mailed survey and 2 subsequent mailings mailed to non-respondents at 3 week intervals. **How many participants were recruited:** Of 375 paediatricians and 375 family physicians: 76% PD and 575 FP responded. **Were there specific exclusion criteria:** Physicians with any speciality board listing, 70yrs or older, resident physicians. **Were there specific inclusion criteria:** All allopathic and osteopathic physicians self-described as a general paediatrician or family physician in office-based direct patient care. **Motivation / referral of participants:** Invited.	study was mailed with survey. After verification of data entry, univariate frequencies were generated for each variable. **Key themes relevant to this review:** *Participants* Barriers: • Monitoring and feedback. • Health professionals' not referring, or making inappropriate referrals, to LWMP. • Perception of negative impact on health, wellbeing or health behaviour. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Monitoring and feedback. • Encouraging tone of providers. *Providers* Enablers: • The language used.	None. **Evidence gaps and/or recommendations for future research:** Investigate if physicians' reticence to refer may affect patient outcomes. **Funding sources:** None received. **Applicable to UK?** (if appropriate): Possibly.

Author and year: Woolford 2011 **Country:** United States **Study design:** Qualitative **Quality score: (inc external validity for surveys)** +	**What was/were the research questions:** The objective of this project was to explore adolescents' perspectives about the text messages that would ultimately be used in a RCT. Six different types of messages were tested: • Testimonials • Meal/recipe ideas • Targeted tips • Reflective questions • Feedback questions • Tailored messages **What theoretical approach (e.g. grounded theory, IPA) does the study take (if specified):** None. **How were the data collected:** • **What method(s):** Via focus groups of 4-8 adolescents lasting 90-120 min. Comments and recommendations made by the adolescents were recorded by two note takers for later review. • **By whom:** Performed by 3 of the authors. • **What setting(s):** Clinic; USA • **When:** Spring 2010.	**Description of study participants:** 24 participants; 71% female; 46% white, 33% black, 21% other; median BMI 36 range 27.6-76.9; median age 15 range 11-19yrs; 45% Medicaid enrolees. **What population were the sample recruited from:** Obese adolescents from Michigan Paediatric Outpatient Weight Management Program (MPOWER). **How were they recruited:** Adolescents in the MPOWER program were invited by email and/or flyer. Consent to participate was obtained from parents and assent from the adolescents. Adolescents were compensated with a $20 gift card for participation. **How many participants were recruited:** 24 participants. **Were there specific exclusion criteria:** No. **Were there specific inclusion criteria:** No. **Motivation / referral of participants:** Participants referred to MPOWER by primary care physician.	**Brief description of method and process of analysis:** Focus groups were conducted by three of the authors. All focus groups reviewed messages from each of the six messages types. Quizdom system was used by participants to vote for questions. Comments and recommendations made by the adolescents were recorded by two note takers then collated and reviewed. Themes were identified by two authors and a third adjudicated any differences. Changes were made to messages based on the participants' recommendations and if it were a substantial change, these messages were retested as part of the final focus group. In addition, the identified themes from the first three focus groups were also discussed during the final focus group, to explore whether the stated themes reflected the participants' opinions. **Key themes (with illustrative quotes if available) relevant to this review:** *Participants* • Perception of negative impact on health, wellbeing or health behaviour. • Concerns that weight management won't be sustained after the LWMP without professional support. Enablers: • Monitoring and feedback. • Encouraging tone of providers. • Misc_Language used (encouraging and natural tone (avoid using colloquial abbreviations is messages were being sent from providers).	**Limitations (author):** Small sample, potential of participants being influenced by others during focus groups although an attempt was made to mitigate this effect by using an audience participation system. **Limitations (review team):** Not clear if participants told about compensation prior to participation. **Evidence gaps and/or recommendations for future research:** Need for additional studies to explore the differential effects of directive texts messages, versus those requiring more psychologic work, on behaviour change among adolescents. **Funding sources:** Not provided. **Applicable to UK?** (if appropriate): Possibly, American study.

APPENDIX B – Quality summary of included studies: Cross-sectional studies (X-sec), Process Evaluations (PE) and Correlation Studies (CS)*

Cross sectional surveys: Given the inherent problems with bias and confounding associated with design of cross sectional surveys, these studies were quality rated (for internal validity) only as + or –.

Eligible population representative of source ; 1.3 Selected population representative of eligible; 2.1 selection bias minimised; 2.2 explanatory variables based on sound theoretical basis; 2.3 contamination acceptably low; 2.4 confounding factors identified and controlled; 2.5 [XSS] Were rigorous processes used to develop the questions (e.g. were the questions piloted / validated?)2.6 setting applicable to the UK; 3.1 Reliable outcomes; 3.2 Complete outcomes; 3.3 Important outcomes assessed; 3.4 Relevant outcomes; 3.5 Similar follow up times; 3.6 Meaningful follow up; 4.1 Groups similar at baseline; 4.2 study sufficiently powered to detect an effect; 4.3 multiple explanatory variables considered in the analyses; 4.4 analytical methods appropriate; precision of association given or calculable; 5.1 Internally valid; 5.2 Externally valid. ++ Minimal bias; +Bias unclear; - Risk of bias; nr Not reported; na Not applicable

Author/ Year	Study design	Population				Method of selection of exposure/comparison group					Outcomes					Analyses				Summary	
		1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	2.6	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	5.1	5.2
Barlow 2006	X-sec –				na	na	na	na	–		+	+	+	na	na	na	na	–	na	–	+
Braet 2010	X-sec +	+	+	++	na	na	na	na	++	+	++	++	+	na	na	na	na	++	++	+	++
Cote2008	X-sec +	+	+	+	na	na	na	na	++	++	++	++	++	na	na	na	na	++	++	+	++
Dhingra 2011	X-sec +	+	+	+	na	na	na	na	+	++	+	++	++	na	na	na	na	++	na	+	++
Gunn 2008	X-sec +	+	+	+	na	na	na	na	–	++	+	++	++	na	na	na	na	+	++	+	+
Woolford 2010	X-sec +	++	++	++	na	na	na	na	++	+	+	+	+	na	na	na	na	++	+	+	++

Correlation study:

* Or Mixed methods studies incorporating cross-sectional or correlation research components

Author/ Year	Study design	Population				Method of selection of exposure/comparison group					Outcomes					Analyses				Summary	
		1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	2.6	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	5.1	5.2
Gunnarsdottir	CS +	++	++	nr	na	++	na	na	+	+	++	+	++	na	++	–	++	++	++	+	nr

Process evaluations: No checklist was available for process evaluation studies and these have not been assessed for validity.

Brennan 2012, Golley 2007, Jones 2010, Kornman 2010, Pittson Unpublished, Robertson 2009, Truby 2011, Watson 2012b, Wolman 2008. Please note that Pittson 2011 and Sahota 2010 were process evaluations with some qualitative data collection. However as they were not designed as a qualitative study, formal critical appraisal was not deemed appropriate and they have been treated as PEs.

APPENDIX C SUMMARY OF QUALITY APPRAISAL – INCLUDED QUALITATIVE STUDIES**

** Or Mixed methods studies incorporating qualitative research component

Key to headings (brief summary from Appendix H, NICE 2009): 1.1 qualitative approach appropriate; 1.2 study clear in what it seeks to do; 2.1 defensible/rigorous research design/methodology; 3.1 data collection well carried out; 4.1 role of the researcher clearly described; 4.2 context clearly described; 4.3 reliable methods; 5.1 data analysis sufficiently rigorous; 5.2 'rich' data; 5.3 reliable analysis reliable; 6.1 Convincing findings; 6.2 Relevant findings; 6.3 Conclusions. ++ Minimal bias; +Bias unclear; - Risk of bias; nr Not reported; na Not applicable

Author/ Year	Study design	Approach		Design	Data	Trustworthiness			Analysis			Summary		
		1.1	1.2	2.1	3.1	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
Alm 2008	Qualitative +	++	++	++	nr	nr	++	+	++	++	+	+	++	++
Avery 2012	Qualitative +	++	++	+	+	nr	+	+	++	–	+	+	++	+
CI Research 2009	Qualitative –	++	++	++	+	nr	–	+	–	+	–	+	++	–
Dixey 2006	Qualitative –	++	+	+	–	nr	–	–	–	+	+	+	++	–
Farnesi 2012	Qualitative ++	++	++	+	+	++	+	++	++	++	++	++	++	++
Gellar 2012	Qualitative ++	++	++	++	++	+	++	++	++	++	+	+	++	++
Hester 2009	Qualitative ++	++	++	++	++	++	++	++	++	++	+	++	++	++
Holt 2005	Qualitative +	++	++	++	++	+	++	+	++	++	+	++	++	++
Jinks 2010	Qualitative +	++	+	+	+	nr	++	+	nr	++	nr	++	++	+
Kitscha 2009	Qualitative +	++	++	++	+	nr	nr	+	++	+	+	++	++	+
Monastra 2005	Qualitative –	++	+	+	+	nr	+	–	+	+	–	+	++	–
Morinder 2011	Qualitative ++	++	++	++	+	++	++	+	++	++	+	++	++	++
Owen 2009	Qualitative ++	++	++	++	++	nr	++	+	++	++	+	++	++	++
Pescud 2010	Qualitative +	++	++	++	++	+	+	++	++	++	–	++	++	++
Perry 2008	Qualitative ++	++	++	++	++	nr	++	++	++	++	+	++	++	++

Pinard 2012	Qualitative –	++	+	–	–	nr	++	nr	–	+	nr	+	++	–
Pittson 2011	Qualitative PE	Focus groups and interviews used to inform the development of a weight management programme. Formal C/A not appropriate. Treat as PE												
		1.1	1.2	2.1	3.1	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
Sahota 2010	Qualitative PE	Six telephone interviews used to find information on weight management programmes to inform a literature review. Not designed as a qualitative study. Formal C/A not appropriate. Treat as PE												
Staniford 2011	Qualitative ++	++	++	++	++	nr	++	+	++	++	++	++	++	++
Stewart 2008	Qualitative +	++	++	++	++	+	+	+	++	+	++	++	++	++
Twiddy 2012	Qualitative +	++	++	++	++	–	+	+	++	+	+	++	++	+
Tyler 2008	Qualitative ++	++	++	+	++	nr	++	+	++	+	+	++	++	++
Watson 2012a	Qualitative +	++	++	+	+	+	++	+	+	++	+	++	++	+
Withnall 2008	Qualitative –	++	++	–	–	–	++	nr	–	++	nr	+	++	+
Woolford 2011	Qualitative +	++	+	++	+	nr	+	+	++	+	++	+	++	++

APPENDIX D: REVIEW TEAM

Staff/Resource Description	Role
Dr Sinead Brophy, DECIPHer, Swansea University	Data extraction
Ms Elizabeth Halstead, Centre for Health-Related Research, Bangor University	Study selection, data extraction and coding
Dr Ruth Kipping, DECIPHer, Bristol University	Content expertise
Ms Fiona Morgan, SURE, Cardiff University	Searching, study selection, quality assessment, data extraction.
Dr Helen Morgan, SURE, Cardiff University	Searching, study selection, quality assessment, data extraction
Professor Jane Noyes, Centre for Health-Related Research, Bangor University	Methodological advice.
Ms Ruth Turley, SURE, Cardiff University	Project management, study selection, data extraction, coding, thematic synthesis and report writing
Dr Alison Weightman, SURE, Cardiff University	Project Director, study selection, quality assessment, data extraction.
Dr Sarah Whitehead, CISHE, Cardiff University	Study selection

APPENDIX E: DRAFT Search Strategy (Ovid Medline) 1 January 2000 to May week 2 2012

The search strategy below was used for effectiveness and barrier/facilitator reviews. It was designed for the Ovid MEDLINE(R) database 1966 to August Week 1 2011 and was adapted for use in the other databases listed in section 2.1.1.

A comprehensive but specific range of terms were identified for each of three concepts (topic, intervention and population) to reduce 'noise' (the number of irrelevant records identified). In addition, the use of medical subject (MeSH) headings was been restricted to allow more targeted searching in title and abstract. Terms for specific programme/study names are included in the search in two ways. Non-specific names such as MEND, SCOTT or SHINE are included within the list of broad interventions. Narrow project names are 'OR'd with the three search concepts as a failsafe to ensure they are not missed in the more focused combination of search concepts.

The search was tested in Medline against a set of 53 potentially relevant papers with 92% being identified. It resulted in 2370 hits from 2000 to date. Database searching was supplemented by a range of snowballing techniques to ensure a highly sensitive search.

Describing topic - reducing or treating obesity

1. (exp obesity/dh or exp obesity/th) and (reduc* or decreas* or treat* or manag* or control* or improv*).ti,ab.
2. overweight/th and (reduc* or decreas* or treat* or manag* or control* or improv*).ti,ab.
3. ((reduc* or decreas* or treat* or manag* or control* or improv*) adj6 (obes* or weight gain or weight loss or overweight or over weight)).ti,ab.
4. or/1-3

Describing broad interventions

5. exp behavior therapy/ or family therapy/ or *family practice/ or weight loss/
6. exp Exercise Therapy/
7. ((group* or family or families* or cognitive) adj1 therap*).ti,ab.
8. ((lifestyle or life style or behavi?r or behavi?ral) adj2 (intervention* or project* or strateg* or program* or organi?ation* or model* or scheme* or initiative* or service*)).ti,ab.
9. outpatient care.ti,ab.
10. ((dietary or diet or physical activit* or exercise or nutrition or nutritional) adj1 (intervention* or program* or project*1 or strateg* or organi?ation* or model* or scheme* or initiative* or service*)).ti,ab.
11. ((dietary or diet or physical activit* or exercise or nutrition or nutritional) adj1 (education or training)).ti,ab.
12. (obes* adj2 treatment*).ti,ab.
13. (children adj3 parent* adj3 (therap* or treatment* or intervention* or program* or project*1 or strateg* or organi?ation* or model* or scheme* or initiative*)).ti,ab.
14. ((school-based or school or schools or communit*) adj2 (program* or project* or intervention* or organi?ation* or model* or scheme* or initiative* or service*)).ti,ab.
15. (("use" or wear*) adj2 pedometer*).ti,ab.
16. ((famil* or parent* or family based or caregiver*) adj1 (treatment* or intervention* or program* or project*1 or organi?ation* or model* or scheme* or initiative* or service*)).ti,ab.
17. ((parent or caregiver*) adj2 (behavio?r or involve* or control* or attitude* or educat*)).ti,ab.
18. ((behavio?r or behavi?ral) adj1 (therapy or modification)).ti,ab.
19. (LEAP RCT or SCOTT or SHINE or (leap adj3 trial)).ti,ab.
20. (weight adj1 (manag* or loss or control or obesity) adj2 (intervention* or program* or project or organi?ation* or model* or scheme* or initiative* or service* or dietary or diet or physical activit* or exercise or nutrition or nutritional)).ti,ab.
21. ((mend or "watch it") adj1 program*).ti,ab.

22. ("on the go" or kick-start or "more life" or "balance it" or "co action" or "be active eat well" or "project story" or SHINE or weight concern or help trial or "healthy eating and lifestyle program" or COCO or COBWEBS or HENRY).ti,ab.
23. ((carnegie or day or residential or boot or weight loss or obes* or overweight) adj (camp or camps or club or clubs)).ti,ab.
24. (jenny adj1 craig*).ti,ab.
25. (rosemary adj1 conley*).ti,ab.
26. (weightwatchers or weight watchers or Slimming World).ti,ab.
27. (cambridge adj1 (weight plan* or weight program* or diet*1)).ti,ab.
28. (lighter life or lighterlife).ti,ab.
29. (counterweight and (exercise or nutrition or weight or obese or obesity or program*)).ti,ab.
30. or/5-29 **[Broad interventions]**
31. 4 and 30 **[obesity AND interventions]**

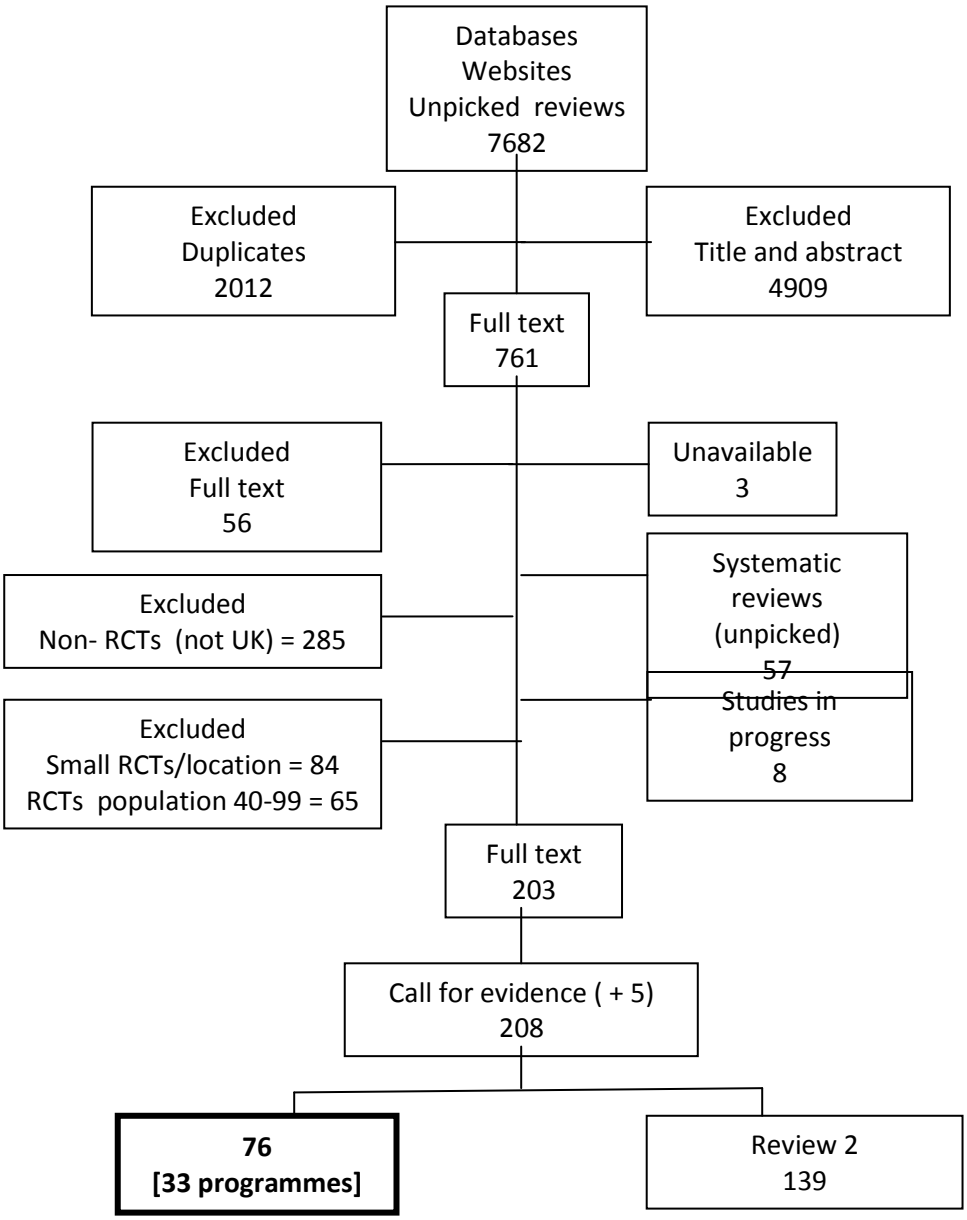
Describing population – 0-17 year olds

32. pediatrics/ or pediatric*.ti,ab. or paediatric*.ti,ab.
33. exp child/ or child, preschool/ or infant/
34. adolescents/
35. (child or children* or schoolchild* or school pupil* or adolescen* or infant* or teen* or kids or youth* or youngster* or boy*1 or girl*1).ti,ab.
36. (young people or young person* or aged 16 or aged 17 or under 18 or under 18s or under 16 or under 16s).ti,ab.
37. or/32-36
38. 37 and 31 **[population AND obesity AND broad interventions]**

Specific intervention terms

39. (slimming adj3 (club* or group* or organi?ation* or program* or scheme* or initiative* or intervention* or service* or project*1 or class*)).ti,ab.
40. (henry adj3 (exercise or nutrition or weight or obese or obesity)).ti,ab.
41. (carnegie adj3 weight management).ti,ab.
42. morelife.ti,ab.
43. (child health improvement sessions or family initiative supporting childrens health or fit friendz or food fit fun or getting our active lifestyles started or "live eat and play" or "mind exercise nutrition do it" or "carnegie weight management" or "alive n kicking" or "beezee bodies" or "care of childhood obesity" or "connect 3" or "fisch family support" or "fit for life academy" or "fun 4 life" or "go 4 it" or "getting our active lifestyles started" or "self help independence nutrition and exercise" or "traffic light childhood obesity" or "Y W8" or "young PALS" or "practice activity and leisure scheme" or "Sheffield obesity trial" or "Scottish childhood overweight treatment trial" or "America on the move" or "stanford sports to prevent obesity" or mini mend or "mend 5-7" or combating obesity ltd or Health exercise nutrition for the really young).ti,ab.
44. or/39-43
45. animal/ not (animal/ and human/)
46. (letter or editorial or historical article).pt.
47. (38 or 44) not (45 or 46)) **[(population AND obesity AND broad interventions) OR specific interventions with limits]**
48. limit 47 to english language
49. limit 48 to yr="2000 -Current"

APPENDIX F: Search flow from Review 1



Note: Seven papers are relevant to both reviews

APPENDIX G: Modified Checklist for Correlation or Cross-sectional studies

Quality Appraisal of Correlation Studies or Cross-sectional Surveys			
	++ = good, + = mixed, - = poor, nr = not reported, na = not applicable		
	Cells are colour-coded to demonstrate the relationship with the summary questions below.		
	Study identification ***(include full citation details)***		
	Study design:	**Cross-sectional**	
	Evaluation criteria	**Quality** ++ + - nr na	**Guidance topic:**
			Assessed by:
Population	**Section 1: Population**		
	1.1 Is the source population or source area well described?		
	1.2 Is the eligible population or area representative of the source population or area?		
	1.3 Do the selected participants or areas represent the eligible population or area?		
Exposure (& Comparison)	**Section 2: Method of selection of exposure (or comparison) group**		
	2.1 [CS] Selection of exposure (and comparison) group. How was selection bias minimised?	**na**	
	2.2 [CS] Was the selection of explanatory variables based on sound theoretical basis?	**na**	
	2.3 [CS] Was the contamination acceptably low?	**na**	
	2.4 How well were likely confounding factors identified and controlled?	**na**	
	2.5 [XSS] Were rigorous processes used to develop the questions (e.g. were the questions piloted / validated?)		
	2.6 Is the setting applicable to the UK?		
Outcomes	**Section 3: Outcomes**		
	3.1 Were the outcome measures and procedures reliable?		
	3.2 Were the outcome measurement complete?		
	3.3 Were all important outcomes assessed?		
Time	**3.4 CS:** Was there a similar follow-up time in exposure & comparison groups?	**na**	
	3.5 CS: Was follow-up time meaningful?	**na**	
Results	**Section 4: Analyses**		
	4.1 CS: Was the study sufficiently powered to detect an effect if one exists?	**na**	
	4.2 CS: Were multiple explanatory variables considered in the anlayses?	**na**	

	4.3 Were the analytical methods appropriate?		
	4.4 Was the precision of association given or calculable? Is association meaningful?		
Summary	**Section 5: Summary**		
	5.1 Are the study results internally valid (i.e unbiased)?		
	5.2 Are the results generalisable to the source population (i.e externally valid)?		

Appendix H Papers excluded from the review at full text

Reference	Reason for Exclusion
Annesi JJ. Initial body mass index and free-time physical activity moderate effects of the Youth Fit for Life treatment in African-American pre-adolescents. Perceptual & Motor Skills 2010 Jun;110(3 Pt 1):789-800.	The sample includes both healthy and over-weight children mixed together.
Banks J, Shield JP, Sharp D. Barriers engaging families and GPs in childhood weight management strategies. The British journal of general practice : the journal of the Royal College of General Practitioners 2011;61(589):e492-e497.	Measures the proportion who were invited and the percentage that actually agreed to referral. No barrier/facilitator data.
Barlow SE, Trowbridge FL, Klish WJ, Dietz WH. Treatment of child and adolescent obesity: reports from pediatricians, pediatric nurse practitioners, and registered dietitians. Pediatrics 2002 Jul;110(1 Pt 2):229-35.	Advice that health professionals give for children with obesity - not about a specific programme.
Bryant M, Farrin A, Christie D, Jebb SA, Cooper AR, Rudolf M. Results of a feasibility randomised controlled trial (RCT) for WATCH IT: a programme for obese children and adolescents. Clinical Trials 2011 Dec 1;8(6):755 655-764.	No barriers or facilitators data relating to LWMP.
Byrne S. Healthy obsession: The role of personality and self-monitoring in weight loss. Dissertation Abstracts International: Section B: The Sciences and Engineering 2011;(8-B):5114.	No barriers or facilitators data relating to LWMP.
Chamberlin LA, Sherman SN, Jain A, Powers SW, Whitaker RC, Chamberlin LA, et al. The challenge of preventing and treating obesity in low-income, preschool children: perceptions of WIC health care professionals. Archives of Pediatrics & Adolescent Medicine 2002 Jul;156(7):662-8.	Not a weight management programme.
Croker H, Viner RM, Nicholls D, Haroun D, Chadwick P, Edwards C, et al. Family-based behavioural treatment of childhood obesity in a UK National Health Service setting: randomized controlled trial. International Journal of Obesity 2012 Jan;36(1):16-26.	No barriers or facilitators data relating to LWMP.
Curtis P. The experiences of young people with obesity in secondary school: some implications for the healthy school agenda. Health & Social Care in the Community 2008 Jul;16(4):410-8.	Not related to a LWMP.
Daley AJ, Copeland RJ, Wright NP, Wales JK, Daley AJ, Copeland RJ, et al. 'I can actually exercise if I want to; it isn't as hard as I thought': a qualitative study of the experiences and views of obese adolescents participating in an exercise therapy intervention. Journal of Health Psychology 2008	An exercise rather than a weight loss intervention.

Sep;13(6):810-9.	
de NJ, Timman R, Jongejan M, Passchier J, van den Akker E, de Niet J, et al. Predictors of participant dropout at various stages of a pediatric lifestyle program. Pediatrics 2011 Jan;127(1):e164-e170.	No barriers or facilitators data relating to LWMP.
Eneli I, Norwood V, Hampl S, Ferris M, Hibbeln T, Patterson K, et al. Perspectives on obesity programs at children's hospitals: insights from senior program administrators. Pediatrics 2011 Sep;128 Suppl 2:S86-S90.	Not possible to tell if in-patient or out-patient programme.
Fraser C, Lewis K, Manby M. Steps in the Right Direction, Against the Odds, An Evaluation of a Community-Based Programme Aiming to Reduce Inactivity and Improve Health and Morale in Overweight and Obese School-Age Children. Children & Society 2012 Mar;26(2):124-37.	Not a LWMP.
Frohlich G, Pott W, Albayrak O, Hebebrand J, Pauli-Pott U, Frohlich G, et al. Conditions of long-term success in a lifestyle intervention for overweight and obese youths. Pediatrics 2011 Oct;128(4):e779-e785.	No barriers or facilitators data relating to LWMP.
Germann JN, Kirschenbaum DS, Rich BH. Use of an orientation session may help decrease attrition in a pediatric weight management program for low-income minority adolescents. Journal of Clinical Psychology in Medical Settings 2006;13(2):169-79.	Baseline predictors of attrition but no barriers or facilitators data relating to LWMP.
Griffith JR, Griffith JR. Assessing childhood obesity programs in low-socioeconomic and diverse communities. Journal of the National Medical Association 2009 May;101(5):421-9.	No barriers or facilitators data relating to LWMP.
Gunnarsdottir T, Njardvik U, Olafsdottir AS, Craighead LW, Bjarnason R, Gunnarsdottir T, et al. Teasing and social rejection among obese children enrolling in family-based behavioural treatment: effects on psychological adjustment and academic competencies. International Journal of Obesity 2012 Jan;36(1):35-44.	Does not examine barriers and facilitators to LWMPs. The study examines prevalence of non-attitudinal variables (psychological maladjustment i.e. emotional and behavioural problems), low academic competencies and teasing/social rejection among obese Icelandic children enrolling in a family-based behavioural treatment). It also explores the degree to which teasing/social rejection specifically contributes to children's psychological adjustment and academic competencies, but does not relate this to determinants of LWMP engagement.
Hinkle KA, Kirschenbaum DS, Pecora KM, Germann JN. Parents may hold the keys to success in immersion treatment of adolescent obesity. [References]. Child & Family Behavior Therapy 2011;(4):Oct-288.	No barriers or facilitators data relating to LWMP.
Holt NL, Moylan BA, Spence JC, Lenk JM, Sehn ZL, Ball GDC. Treatment preferences of overweight youth and their parents in Western Canada. Qualitative Health Research 2008 Sep;18(9):1206-	The study assesses the views of users on a wait-list for a weight management clinic. It gathers general views relating to general barriers of weight loss, but not specific to a LWMP. The treatment preferences relate to general opportunities for physical activities (e.g. leisure

19.	centres) not specific LWMPs.
Jacobson D, Melnyk BM, Jacobson D, Melnyk BM. Psychosocial correlates of healthy beliefs, choices, and behaviors in overweight and obese school-age children: a primary care healthy choices intervention pilot study. Journal of Pediatric Nursing 2011 Oct;26(5):456-64.	No barriers or facilitators data relating to LWMP.
Lane-Tillerson C, Davis BL, Killion CM, Baker S, Lane-Tillerson C, Davis BL, et al. Evaluating nursing outcomes: a mixed-methods approach. Journal of National Black Nurses Association 2005 Dec;16(2):20-6.	No barriers or facilitators data relating to LWMP – just effectiveness evaluation.
Lowry KW, Sallinen BJ, Janicke DM. The effects of weight management programs on self-esteem in pediatric overweight populations. [References]. Journal of Pediatric Psychology 2007;(10):Nov-Dec.	Literature review (not SR suitable for unpicking).
Lumeng JC, Kaplan-Sanoff M, Shuman S, Kannan S, Lumeng JC, Kaplan-Sanoff M, et al. Head Start teachers' perceptions of children's eating behavior and weight status in the context of food scarcity. Journal of Nutrition Education & Behavior 2008 Jul;40(4):237-43.	Prevention programme.
Macdonald M. Clinically obese children identified facilitators and barriers to initiating and maintaining the behaviours required for weight loss. Evidence Based Nursing 2007 Jul;10(3):92.	Commentary on Murtagh paper - which has already been identified.
MacDonell K, Ellis D, Naar-King S, Cunningham P. Predictors of home-based obesity treatment efficacy for African American youth. Children's Health Care 2010;39(1):1-14.	No barriers or facilitators data relating to LWMP.
McCallum Z, Wake M, Gerner B, Harris C, Gibbons K, Gunn J, et al. Can Australian general practitioners tackle childhood overweight/obesity? Methods and processes from the LEAP (Live, Eat and Play) randomized controlled trial. Journal of Paediatrics & Child Health 2005 Sep;41(9-10):488-94.	No barriers or facilitators data relating to LWMP. Intervention study.
Po'e EK, Gesell SB, Lynne CT, Escarfuller J, Barkin SL. Pediatric obesity community programs: barriers & facilitators toward sustainability. Journal of Community Health 2010 Aug;35(4):348-54.	Mixes views from providers of obesity prevention and treatment programmes.
Porter JS, Bean MK, Gerke CK, Stern M, Porter JS, Bean MK, et al. Psychosocial factors and perspectives on weight gain and barriers to weight loss among adolescents enrolled in obesity treatment. Journal of Clinical Psychology in Medical Settings 2010 Jun;17(2):98-102.	No barriers or facilitators data relating to LWMP – just barriers to weight loss in general.

Roberts SH, Bailey JE, Roberts SH, Bailey JE. Incentives and barriers to lifestyle interventions for people with severe mental illness: a narrative synthesis of quantitative, qualitative and mixed methods studies. Journal of Advanced Nursing 2011 Apr;67(4):690-708.	Systematic review.
Sacher PM, Chadwick P, Wells JC, Williams JE, Cole TJ, Lawson MS, et al. Assessing the acceptability and feasibility of the MEND Programme in a small group of obese 7-11-year-old children. Journal of Human Nutrition & Dietetics 2005 Feb;18(1):3-5.	No barriers or facilitators data relating to LWMP - just a feasibility study measuring effectiveness of the study.
Steele MM, Steele RG, Cushing CC. Weighing the pros and cons in family-based pediatric obesity intervention: Parent and child decisional balance as a predictor of child outcomes. [References]. Children's Health Care 2012;(1):Jan-55.	Not received from British Library. Unable to assess.
Stern M, Mazzeo SE, Porter J, Gerke C, Bryan D, Laver J. Self-esteem, teasing and quality of life: African American adolescent girls participating in a family-based pediatric overweight intervention. Journal of Clinical Psychology in Medical Settings 2006;13(3):217-28.	Group includes normal weight (at risk of overweight) as well as overweight subjects.
Stokkenes G, Fougner M. Physical activity and overweight: Experiences of children and youth in a Norwegian project. Advances in Physiotherapy 2011;13(4):170-6.	Physical activity intervention. Not a LWMP.
Story MT, Neumark-Stzainer DR, Sherwood NE, Holt K, Sofka D, Trowbridge FL, et al. Management of child and adolescent obesity: attitudes, barriers, skills, and training needs among health care professionals. Pediatrics 2002 Jul;110(1 Pt 2):210-4.	General views of health professionals regarding the treatment of overweight but not specific to weight management programmes.
Taveras EM, Sobol AM, Hannon C, Finkelstein D, Wiecha J, Gortmaker SL. Youths' perceptions of overweight-related prevention counseling at a primary care visit. [References]. Obesity 2007;(4):Apr-836.	Includes mixed sample of overweight and normal weight individuals.
Trigwell, MerseyBEAT Addressing childhood obesity in black and racial minority (BRM) populations in Liverpool Project Report . 2011. Ref Type: Unpublished Work	Includes healthy weight children.
Turner KM, Salisbury C, Shield JPH. Parents' views and experiences of childhood obesity management in primary care: a qualitative study. Family Practice 2011 Nov 24.	No barriers or facilitators data relating to LWMP.
Van GM, Franc C, Rosman S, Le VM, Pelletier-Fleury N, van Gerwen M, et al. Primary care physicians' knowledge, attitudes, beliefs and practices regarding childhood obesity: a systematic review. [Review] [33 refs]. Obesity	Systematic review.

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Walker K, Caine-Bish N, Wait S, Walker K, Caine-Bish N, Wait S. I like to jump on my trampoline: an analysis of drawings from 8- to 12-year-old children beginning a weight-management program. Qualitative Health Research 2009 Jul;19(7):907-17.	No barriers or facilitators data relating to LWMP.
Ward-Begnoche W, Speaker S. Overweight youth: Changing behaviors that are barriers to health. [References]. The Journal of family practice 2006;(11):Nov-963.	General discussion paper.
Watson PM. Walsall PCT GOALS Pilot (Bentley) Evaluation Report. 2010. Ref Type: Unpublished Work.	Sample includes two children of healthy weight.
Watson PM. Walsall PCT GOALS Pilot (Bentley) Follow-up report. 2011. Ref Type: Unpublished Work.	Sample includes two children of healthy weight.
Watson PM, Dugdill L, Murphy R, Knowles Z, Cable NT. Moving forward in childhood obesity treatment: A call for translational research. Health Education Journal 2012 Apr 3.	Discussion paper not a study.
Woolford S, et al. A picture may be worth a thousand texts: obese adolescents' perspectives on a modified photovoice activity to aid weight loss. Childhood obesity 2012;8(3):230-6.	Views on a specific 'photovoice' intervention which is a potential add-on to, but not a component part of LWMP. NB. A new technology that has potential for inclusion in programmes in the future.
Wu T, Tudiver F, Wilson JL, Velasco J, Wu T, Tudiver F, et al. Child overweight interventions in rural primary care practice: a survey of primary care providers in southern Appalachia. Southern Medical Journal 2007 Nov;100(11):1099-104.	No barriers or facilitators data relating to LWMP.
Yaeger-Yarom G, Nemet D, Eliakim A, Yaeger-Yarom G, Nemet D, Eliakim A. Causes and patterns of referral to a tertiary, multidisciplinary program for the treatment of childhood obesity. Journal of Pediatric Endocrinology 2011;24(5-6):303-6.	Conducted in ineligible country (Israel).