

Background: In response to the increasing prevalence of obesity in children and adolescents, numerous interventions with the potential to reduce obesity levels or associated risk of chronic diseases in children and youths have been implemented across the UK, including the West Midlands. However, few of these interventions have been systematically evaluated and consequently, there is a need to examine their effectiveness. This report outlines an evaluation of seven child weight management programmes that were in place in the West Midlands region during July 2007-July 2009.

Aims: This project aimed to determine the following:

- The benefits to participating (a) children and (b) families in terms of health improvement and behaviour change;
- Possible barriers to change for (a) children and (b) families undertaking treatment programmes;
- The range of short and longer term support available for programme participants;
- The cost effectiveness of each intervention.

Method: The evaluation employed a multi-method strategy as follows:

- An audit of the Standard Evaluation Framework (SEF) essential and desirable data collected by each intervention programme;
- A review of programme materials, including the theoretical rationale and evidence base for each intervention programme;
- An assessment of physical and psychosocial benefits to programme participants;
- An economic evaluation of the interventions.

Results: In summary the results indicated that:

- No programme collected all of the essential or desirable SEF criteria, however 19 essential criteria were collected by all the interventions including child weight and height.

Physical activity and dietary measures were collected by the majority of programmes (N=6 and 5 respectively);

- The dietary and physical activity measures used by programmes were varied, however all asked about fruit and vegetable intake and number of days in the past week in which moderate activity had been undertaken for 30 or 60 minutes;
- Four programmes collected data on psychosocial outcomes, including information on self-esteem;
- Barriers to data collection included literacy levels and time constraints;
- Five programmes collected long term follow up data at 3 and/or 6 months;
- The quantity of data collected at follow up was often limited due to participant drop out, which appeared to relate to participant perceptions that once the weekly programme had finished, the intervention was complete;
- A variety of recruitment methods had been tried by all programmes, the most successful of which appeared to be links with community and schools events;
- Little success had been had from the use of NCMP letters for recruitment purposes, as parents either did not understand the implications of the letters or did not believe that their child had a weight problem;
- Recruitment to programmes was primarily by self referral which was thought to be successful because of awareness raising in the community and word of mouth;
- Retention rates ranged from 32.9% to 89% with the majority of programmes (N=6) having a retention rate of at least 50%;
- No differences were found in terms of demographics or starting weight between completers and non-completers for the majority of programmes (N=5);

- Barriers to attendance included the child not wanting to attend, other family commitments and problems with access to the venue;
 - Most programme deliverers reported that parental attitudes to their child's weight was also an issue, suggesting that many parents of overweight and obese children did not believe their child had a problem;
 - All the programmes were based either on NICE guidelines or theories of behaviour change and offered both nutritional advice and exercise classes;
 - Other support offered included one to one mentoring (N=2), cooking classes for parents (N=3) and goal setting and monitoring (N=4);
 - Long term support was offered by five programmes and ranged from referral to exercise programmes to one to one mentorship;
 - Financial costs, based on programme ranged from £203 to £669 per participant;
 - It should be noted that costs per participant increased if the programme had difficulty recruiting;
 - Weight change ranged from an increase in group mean of 0.4Kg to a decrease of 0.9Kg;
 - Even when group means showed an increase in weight there were often benefits for the majority of the group, with over half of all children either maintaining or losing weight in three programmes;
 - Weight loss is not the best indicator of change in weight status for children, due to changes in height and BMI or BMI SD which shows how far a child's BMI is from the population norm are preferred;
 - BMI change ranged from an increase of 2.7 points to a decrease of 0.9 points;
 - BMI SD decreased in four programmes (by 0.1-0.2 points) and remained unchanged in two programmes;
 - Psychosocial benefits reported by three programmes included improved self-esteem and perceived physical appearance;
 - Improvement in diet and exercise were reported by participants in all those programmes which measured these behaviours;
 - It should be noted however that these self-report measures may reflect a social desirability bias.
- Conclusions and Recommendations:**
- As all the programmes evaluated have strengths as well as weaknesses, it is recommended that sharing of good practice between programmes and PCTs is facilitated in order to improve outcomes/data collection in all areas across interventions;
 - Consideration should also be given to the systematic evaluation of any delivery tools currently in use (e.g. visual aids vs. hands-on lessons to teach nutrition education), in order to inform practice and allow commissioners and providers to assess what best delivers
 - There are differences in data collection and recording across the programmes and this can make comparison complicated;
 - It is therefore recommended that there is some standardisation of data collection in terms of what is collected and how the information is recorded;
 - Difficulties collecting follow up data make it difficult to gauge the long-term impact of the programmes;
 - Good follow up data is essential in order to assess the potential impact of weight management interventions on children's future health. It is therefore recommended that priority is given to establishing ways of collecting this data;
 - Given the difficulty of gauging the impact of weight change on a child's weight status, the use of BMI, rather than weight as a measure of physical change is recommended;
 - Changes in behaviour related to food intake and exercise should also be measured in a systematic and standardised way and this information fed back to clients as part of the change process. A set of standardised measures to assess this behaviour change is proposed;
 - Use of an interoperable data base either accessed through a centralised system or made available to all programmes locally is also recommended.