Obesity prevention interventions for middle school-age children of ethnic minority: a review of the literature

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CRD summary
This review failed to identify effective interventions specific to ethnic minority children, but behavioural strategies that targeted self-esteem, motivation, poor health practices, sedentary behaviours, neighbourhood safety and parental inclusion can influence the 10 to 14 year old age group. Given the limitations of the review and the unknown quality of the included studies, the conclusions should be treated with caution.

Authors' objectives
To identify obesity prevention programmes for middle school-age children and examine which programmes applied interventions specific for ethnic minorities.

Searching
PubMed, CINAHL and PsycINFO were searched to November 2008; search terms were reported.

Study selection
Studies that evaluated obesity prevention programmes for improving healthy behaviours through multicomponent activities within the last 10 years in a population that included middle school-age children (10 to 14 years) were eligible for inclusion.

Most of the studies were conducted in USA; single studies were in Chile, Australia and Belgium. Most interventions were school-based and lasted between eight weeks and two years. Interventions varied considerably across the studies, although all contained a component of dietary education. Some studies were not targeted specifically at middle school-age children. Most studies did not report the ethnic mix of participants; where this was reported, most were white.

The authors did not specify how many reviewers selected studies for the review.

Assessment of study quality
The authors did not state that they assessed study quality.

Data extraction
Impacts of anti-obesity interventions were extracted in terms of whether or not health behaviours such as diet choices, physical activity, fitness levels and measures of obesity were improved.

The authors did not state how many reviewers performed data extraction.

Methods of synthesis
Studies were combined in a narrative synthesis grouped by intervention: personal factors (knowledge, self-esteem, motivation), behavioural factors (diet, physical and sedentary activity) and environmental factors (neighbour safety, parental involvement, family support). Study details were tabulated. Differences between studies were discussed in the text.

Results of the review
Eight studies were included in the review (n=9,621 participants, range 65 to 3,086): four RCTs, one pre-post study, two quasi-experimental studies and one longitudinal controlled evaluation study.

All studies showed modest results in increasing healthy eating and activity behaviours. Strategies that worked best for 10 to 14 year olds were mixed. The included studies provided no additional insight into what interventions worked best.
specifically for middle school-age children. There were some gender-related differences that suggested obesity prevention interventions should be gender specific. Compared with boys, girls tended to have a greater response to multiple interventions overall; some improvements were limited to diet. Five studies showed increases in physical activity and general fitness programmes in boys.

Interventions that targeted knowledge, self esteem and motivation by goal setting showed improved dietary choices and increased intake of fruits and vegetables in all studies except one, which showed no improvement in dietary behaviours in boys after two years of health education.

Interventions that targeted diet and level of activity behaviours showed positive impacts on soft drink consumption (two studies), fruit and vegetable intake (three studies), physical activity (two studies) and less sedentary behaviour (two studies).

Interventions that targeted environmental factors such as neighbourhood safety and parental/family involvement showed: a high rate of attendance at an obesity clinic at tutoring facility within walking distance of home and in a gang-neutral site (one study); decreased fat intake and higher levels of physical activity in girls at one year when parents received the same computer-tailored intervention, although this benefit was no longer apparent after two years (one study); parent-reported positive changes in children's health behaviour with parental involvement in the educational programme in smaller city schools compared to larger ones (one study); positive results in both eating and physical activity behaviours when children discussed some or all of the mailed information they received with family or friends (one study); increased physical activity, fitness, body composition, blood cholesterol and better dietary choices when parents of higher risk children encouraged their children (one study); and where mothers and daughters participated together in the intervention, daughters' behaviours changed minimally during the 12-week intervention, but mothers' modelling behaviours may have influenced daughters over time (one study).

Authors' conclusions
The review failed to identify programmes with effective interventions specific to ethnic minority children. The findings suggested that there was merit in addressing specific factors that influenced the 10 to 14 year old age group. These included: behavioural strategies that increased self-esteem and motivation and targeted poor health practices; exposure to television and other sedentary behaviours; neighbourhood safety; and parental inclusion in intervention programmes.

CRD commentary
The review addressed a clear research question supported by appropriate inclusion criteria. Three relevant sources were searched. It was unclear whether language restrictions were applied and unpublished studies were not sought, so language and publication biases could not be ruled out. The review process was poorly reported and it was unclear whether methods were used to reduce error and bias. Study quality was not assessed and it was difficult to assess study quality based on the study details provided. Reporting of results was limited; raw data and p-values were not reported and this made it difficult to assess the magnitude of benefit. The decision to combine studies in a narrative synthesis was appropriate given the clinical heterogeneity across studies. The review was unable to answer the review question.

Given the limitations of the review and the unknown quality of the included evidence base, the conclusions should be treated with caution.

Implications of the review for practice and research
Practice: The authors stated a need to include education and awareness for decreasing sedentary behaviours and increasing physical activities in obesity prevention programmes that targeted middle school-age children. Greater emphasis was needed on middle school-age children of ethnic minorities.

Research: The author stated that further research was needed to understand the influence of social support in ethnic minorities.

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