Public Health Research Consortium

Obesity in ethnic minority children and adolescents: developing acceptable parent and child-based interventions in schools and places of worship

The overall prevalence of childhood obesity is levelling off in the UK but this is not evident among socio-economically disadvantaged children and ethnic differences are apparent.

Few intervention studies involve ethnic minority groups and those that exist are largely US based and focused on treatment rather than prevention of childhood obesity.

This study aimed to conduct developmental research in areas of ethnic diversity in both schools and places of worship to identify culturally acceptable child- and family-based interventions.

Awareness of some healthy eating messages (e.g. five-a-day fruit and vegetables) was widespread across ethnic groups but there were gaps in knowledge, such as a lack of awareness of physical activity recommendations for children.

For ethnic minority groups, a key facilitator of healthy lifestyles included regular family meals. Concern was expressed by parents about the proliferation of fast food outlets near homes and schools, the perceived danger of outdoor spaces and, for Black Caribbean and Black African parents, lack of traditional ingredients in large supermarkets.

Interactive intervention sessions to facilitate active learning to address gaps in knowledge and promote skills and habits yielded the most favourable results.

Participation rates were high for all dietary and physical activity assessment measures with no significant linguistic or cultural issues.

There is a need to augment food composition databases with ethnic-specific foods to improve cultural appropriateness.

Feedback from teachers, parents and key contacts in places of worship signaled approval of the intervention.

The feasibility of delivering intervention sessions may be better in schools but raises the question of the extent of compliance and sustainability of behaviour change in the long-term, without the culturally-focused support for families from their communities.

Background

The prevalence of childhood obesity has doubled over the last two decades in the United Kingdom (UK)[1]. Obesity in childhood tracks to adulthood, with obese adolescents 20 times more likely to be obese in early adulthood than their leaner peers[2]. Recent UK data suggest a levelling off of the overall prevalence of obesity, although this is not evident among socio-economically disadvantaged children[3] and ethnic differences are still apparent.

The need for effective models for obesity prevention among ethnic minorities is critical as few interventions currently exist. The use of places of worship as a potential mechanism for prevention of childhood obesity is supported by the fact that around 50-80% of Black Caribbean, Black African, Indian, Pakistani and Bangladeshi youths in a London based cohort reported weekly attendance to a church or mosque[4] and attendance had a protective effect on mental health. In the UK, there is no other known study currently addressing obesity prevention in children across a diverse range of ethnic groups and places of worship.

The DiEt and Active Living (DEAL) Study

The study used a socio-ecological model as a conceptual guide to frame the intervention, in recognition of the shaping of individual, family and community intentions by contextual influences[5]. The study also reflected the Development, Feasibility and Piloting phases of the MRC's guidance for the development and evaluation of complex interventions[6], in preparation for a later definitive trial.

The overall aim of DEAL was to identify culturally acceptable child- and family-based interventions to reduce dietary and physical activity risk factors for childhood obesity among ethnic minorities, in both schools and places of worship. We explored how potential interventions might work and the setting most likely to support effective engagement.

Methods

The study was conducted with 77 children aged 8-13 years from diverse ethnic groups including Black African, Black Caribbean, Indian, Pakistani, Bangladeshi, White UK and mixed ethnicity groups. The settings for the study were three primary schools, two secondary schools, one Church of England and two Pentecostal churches (targeting Black African and Black Caribbean families), one mosque (Pakistani and Bangladeshi families), one Shree Swaminarayan temple, one Sikh Gurdwara, one Tamil temple and a Jain prayer group (Indian families). In addition, 43 parents and 12 grandparents took part in qualitative interviews. Taster intervention sessions were delivered to 168 children in whole classes in schools or small groups in places of worship.

We used a combination of focus group discussions, in-depth interviews and structured questionnaires to explore what children, parents, grandparents, teachers and religious leaders thought hindered and promoted engagement with healthy eating and active living choices. We also assessed the potential for wider community support (local councils, community networks, faith forums, etc.) of the intervention.

Thirteen focus group sessions were held with children and eight focus groups and five one-to-one interviews with parents. Based on the findings from the qualitative data and from the literature on intervention studies with children, thirteen practically oriented, interactive taster intervention sessions were designed. Delivery was aimed at the class level in schools and attempts were made in places of worship to integrate sessions into existing mechanisms (e.g. youth groups). The format included education only sessions delivered by short power-point presentations, and small group activities (quizzes, poster design); interactive sessions incorporating both education and active elements; and activity only sessions such as 'street dance'. The content of the sessions aimed to raise awareness of healthy living, address knowledge gaps (e.g. physical activity recommendations) and motivate behavioural practices (e.g. goal setting). Activities had a theme of simple messages targeting reduction of high energy-dense snack foods, sugar-sweetened beverages and sedentary behaviours, and increasing intake of fruit and vegetables, daily healthy breakfast and everyday activity. Sessions were followed

by qualitative evaluation on a group or individual basis.

We used small scale iterative testing of the cultural appropriateness and acceptability of the Youth Physical Activity Questionnaire (YPAQ), validated with objective Actiheart physical activity measure, and of twenty-four hour dietary recalls, 3-day food diaries, an interactive portion size assessment system (IPSAS), and diet and physical activity self efficacy questionnaires.

Key findings

Several issues were common to all ethnic and social groups. There was widespread awareness of healthy eating messages such as the 'five-a-day' fruit and vegetable recommendations, but gaps in knowledge such as a lack of awareness of physical activity recommendations for children. Across groups, children did not appear to enjoy school meals, raising issues related to overcooking, taste and visual aspects which combined to make food unpalatable. There was a lack of interest in discussing or doing physical activity among children. Girls gave reasons such as lack of confidence in playing sports, especially when participating in team games or those with boys, for not enjoying physical education lessons at school. Regardless of ethnicity, parents expressed concern about the proliferation of fast food outlets thwarting their efforts to retain healthy dietary practices and about parks being unsafe for play.

Ethnic-specific influences on behaviours were apparent in the discussion around the efforts to retain traditional practices. The notion of what constitutes a family, roles and responsibilities for child care, the importance of religion and community life to family cohesiveness were issues commonly discussed in relation to family health. Regular family meals were seen as an ideal eating practice for many of the ethnic minority families in this study. For South Asian families, there was a clear sense that family meals not only provided an opportunity to monitor their children's dietary intake but also to discuss the everyday practices of family life. The availability of traditional foods influenced shopping practices. South Asian mothers felt that many of the high street supermarkets sold traditional South Asian cooking ingredients, reducing the need to shop around. In contrast, Black Caribbean and Black African mothers felt that there was a lack of their traditional foods available in the high street supermarkets and they tended to shop in "the African shop" or the market.

These findings informed both the content of the intervention (see table) and facilitating mechanisms (e.g. family, cultural networks).

Intervention 'taster' sessions

Topic	Intervention aims
Diet only sessions	
5-a day fruit and vegetables	The 5-a day message Fruit and salad alternatives to energy dense snacks
Healthy snacks	Incorporating dietary alternatives to energy dense drinks/ snacks e.g. one smoothie per day
Fats in the diet	The role of fats: as part of a healthy diet; in the energy density of foods
Breakfast options	Importance of eating breakfast; The impact of skipping breakfast on food intake throughout the day
Physical activity only sessions	
Benefits of physical activity	Understanding the benefits of physical activity; Maintaining healthy body weight
Conventional sport	Using popular activity to reinforce physical activity messages
"Street dance"	Using popular activity to reinforce physical activity messages
Physical activity frequency, intensity, type and time (FITT) principles	Physical activity requirements for health; FITT principles; Active leisure; Increasing PA in daily activities and reducing sedentary behaviours
Physical activity and energy balance	Principles of physical activity; How physical activity is linked to energy balance
Combined diet and physical activity sessions	
Arterial stiffness	Heart health Heart and arterial stiffness in relation to diet, physical activity and cardiovascular fitness
Energy balance	Principles of energy balance

Table adapted from Maynard et al 2009[7]

There was no evidence of ethnic, age or gender bias in session participation rates or in enjoyment, with practically orientated, interactive activities being the most popular, regardless of ethnicity. These sessions were also useful in identifying gaps in knowledge about diets (e.g. types of fats) or in habits related to overweight (e.g. skipping breakfast). The implication of these findings is that in ethnically-diverse settings, such as schools in London, it is possible to deliver an intervention that could benefit children across all ethnic groups.

With regard to the dietary and physical activity measures, there were high participation rates, no significant linguistic/interpretation issues, and no suggestion of ethnic differences in acceptability. Fewer assumptions were required to code and determine nutrient intake from the 24 hour recall than from the 3-day food diary data. The IPSAS database, however, did not include the full range of ethnic specific foods required.

Schools welcomed our efforts to optimise curriculum activities linked to the Healthy Schools initiative (e.g. increasing and measuring the intensity of physical activity, improving dietary knowledge) and evaluating their effects. In contrast to schools, places of worship clearly provided ready access to ethnic minority parents and grandparents. Community organisations actively interfaced with places of worship but also directly with families via festivals, newsletters etc. The significance of attendance at places of worship goes beyond religious observance, in that it secures access to extensive social networks within the community setting.

Conclusions

While common influences on behaviours across ethnic groups were apparent, important ethnic influences were identified. Ethnic differences in how the family functions and in social support networks suggest obesity prevention interventions need to incorporate mechanisms for accommodating diversity in the cultural frameworks that guide everyday life. The school setting may be better for the implementation of healthy lifestyle interventions, but places of worship provide valuable opportunities for family and culturally-specific support. Although there was enormous goodwill for the DEAL study in the community setting, a recurrent barrier was inadequate infrastructural support. What we do not know is whether it is more effective to have the provision of a consistent 'dose' of intervention in schools or 'inconsistent exposure' to an intervention that includes families and communities. The former is easier to evaluate but the latter may be more effective.

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