

- A partnership of public health researchers across the five universities in North East England
- Focused on working with policy makers and practice partners
- A founding member of the NIHR School for Public Health Research (SPHR)
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What is the most effective way to reduce inequalities in childhood obesity?

Obesity is a major public health priority due to rising rates in the UK and internationally. It is associated with a range of chronic diseases. In some deprived areas rates of child obesity are almost double the rates of obesity in the least deprived areas. Reducing inequalities in childhood obesity is particularly important as it can have long-lasting effects into adult life.

This is the first review to systematically examine public health interventions at different levels (individual, community and societal – environmental and on a large scale) which aim to reduce inequalities in childhood obesity.

Nine electronic databases were searched, along with websites and unpublished literature, by researchers from Fuse - the Centre for Translational Research in Public Health. The review examined the best available international evidence from interventions that aimed to reduce obesity-related behaviours (diet and/or physical activity) amongst children (aged 0-18 years) in any setting and country as long as they provided relevant information and analysis on both socioeconomic status and conditions related to obesity.

Twenty-three studies provided the best available evidence. There were four studies of individual level interventions that provided some evidence for the effectiveness of reducing screen time (e.g. computer or TV usage) and mentoring health promotion interventions in reducing inequalities in obesity. For community level interventions, there were 13 studies, some of which suggested that school-based health promotion activities and community-based group programmes were effective in reducing obesity. Five environmental level studies suggested that multifaceted school-based obesity prevention interventions are effective at reducing obesity-related conditions in children from less affluent

families aged 6-12 years but may not be effective amongst preschool children. No large scale societal studies were found. One multilevel study - interventions that operate on different levels, for example: individual (e.g. health education targeted at changing individual's behaviour); community (e.g. school-based exercise and diet programmes); and societal (e.g. environmental modifications such as making healthy foods available in school, or canteen nutrition policies) - found that a community capacity-building intervention halted the widening of inequalities in obesity.

Examples of effective interventions include:

- A two-year School Nutrition Policy Initiative based on multifaceted education and environment interventions in some low-income schools in the USA increased nutritional knowledge, the availability of healthy food, and reduced the amount of overweight children by 35%.
- An Australian 'Be Active Eat Well' intervention designed by key organisations to build a community's capacity to create its own solutions to promoting healthy eating, physical activity and healthy weight found that after three years children in the intervention schools had significantly lower increases in waist circumference and Body Mass Index (BMI).

Key Findings

- School-based educational and environmental interventions were found to be the most effective in acting to reduce inequalities in childhood obesity-related conditions.
- Community empowerment may also play an important role in effective public health obesity interventions.
- Evidence is largely based on US studies and focused on 6-12 year olds. More high quality studies need to be undertaken in the UK and among adolescents.

Policy relevance and Implications

- Some school-based educational and environmental interventions have been found to be effective in reducing inequalities in childhood obesity so it may be worth commissioning these types of interventions in the UK.
- Interventions that involve the community in the designing and implementation of studies may also be effective in reducing inequalities in childhood obesity so should be fostered in future research.
- More high quality studies are required, especially amongst adolescents as there are very few studies that examined this age group, with studies mostly targeting 6-12 year olds.
- While this review found limited evidence of individual and community based interventions that may be effective in reducing socioeconomic inequalities in obesity-related outcomes amongst children, further research is required, particularly of more complex, societal level interventions and amongst adolescents. Cost-effectiveness of interventions also needs to be assessed in future studies.

“Some school-based educational and environmental interventions have been found to be effective in reducing inequalities in childhood obesity”

BRIEF DESCRIPTION OF THE RESEARCH

This Fuse research was part of a two-year project funded by the National Institute for Health Research (NIHR) which aimed to reduce inequalities in obesity. There were two systematic reviews undertaken as part of this project to examine effectiveness of public health interventions in reducing inequalities in childhood and adult obesity at different levels.

Hillier-Brown FC, Bambra CL, Cairns JM, et al. A systematic review of the effectiveness of individual, community and societal level interventions at reducing socioeconomic inequalities in obesity amongst children. *BMC Public Health* 2014;14:834. (<http://www.biomedcentral.com/1471-2458/14/834/abstract>).

Web: <http://www.nets.nihr.ac.uk/projects/phr/09301014>

FURTHER INFORMATION

Professor Clare Bambra
Email: clare.bambra@durham.ac.uk
Telephone: 0191 334 3496

Fuse is one of five UKCRC Public Health Research Centres of Excellence. It brings together public health researchers from across the five universities in North East England.

Website: fuse.ac.uk/research/briefs
Twitter: @fuse_online
Blog: fuseopenscienceblog.blogspot.co.uk
Email: info@fuse.ac.uk
Telephone: 0191 222 729

