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Fuse - Centre for Translational Research in Public Health

- 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)
- A UK Public Health Research Centre of Excellence

What is the most effective way to reduce inequalities in adult obesity?

Rising obesity rates are a national and international public health concern. Obesity is associated with a range of chronic diseases, such as diabetes, heart disease, stroke, high blood pressure, osteoarthritis and some forms of cancer. Higher levels of obesity are found in more low-income groups and there is a lack of evidence of the types of interventions that are effective in reducing these inequalities.

This is the first research to systematically review international public health interventions that try to reduce inequalities in adult obesity. Previous reviews have examined interventions that aim to reduce prevalence of adult obesity but not *inequalities* in adult 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Nine electronic databases were searched, along with websites and unpublished literature, by researchers from Fuse - the Centre for Translational Research in Public Health.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 evidence from interventions that aimed to reduce obesity-related behaviours (diet and/or physical activity) amongst adults in any setting and country as long as they provided relevant information and analysis on both socioeconomic status and conditions related to obesity. Different levels of intervention were examined including: individual (e.g. health education or lifestyle counselling); community (e.g. group-based sessions); and societal (e.g. environmental modifications to the workplace).

Twenty studies provided the best available evidence. Five individual-level studies suggest that primary care-delivered tailored weight loss programmes targeted at low-income groups can have positive short-term effects on weight loss (for up to nine months after the end of the programme) but that these are not sustained in the longer-term (after 12 months). Health education interventions have little long-term impact on weight in high or low income groups. These individual-level interventions therefore seem only to provide short-term reductions in obesity-related conditions amongst low income groups. There were 12 community-level studies which found community-based group weight loss interventions have short-term positive effects on weight loss; group-based lifestyle counselling-style interventions have a limited effect, as do group-based health education interventions; however, some multifaceted workplace studies showed longer-term positive effects on reducing inequalities in obesity. One environmental study suggested that a multifaceted workplace weight prevention intervention could actually *increase* inequalities in obesity-related outcomes. Two societal studies examined the effects of the US food stamp programme but found little evidence of a relationship between participation in this programme and weight change.

Examples of effective interventions include:

- A UK study of a 12-week primary-care delivered intervention found significant reductions in Body Mass Index (BMI), body weight and percentage body fat amongst overweight new mothers living in areas of moderate to high deprivation.
- A behavioural therapy (e.g. problem-solving, assertiveness training, stimulus control) and social support (peer delivered in groups) intervention was effective in reducing weight amongst low-income men and women in the USA.

Key Findings

- Studies from the UK and US show that primary care-delivered tailored weight loss programmes with monthly face-to-face lifestyle counselling on healthy diet and physical activity behaviours, targeted at low-income women, can be effective in reducing weight.
- Community-based weight loss interventions (diet clubs, commercial and behavioural programmes) have positive effects in the short-term in low income groups or equally across the socioeconomic gradient.
- The majority of studies focused on women. More studies that examine the effectiveness of public health interventions that reduce inequalities in obesity amongst men need to be examined.
- There is some evidence that workplace-delivered physical activity interventions can be effective in reducing inequalities in obesity but the evidence base is small so further research is required.

Policy relevance and Implications

- The best available international evidence suggests that some individual and community-based interventions may be effective in reducing socioeconomic inequalities in obesity among adults in the short-term. Further research is required particularly of more complex and societal-level interventions.
- It may be worth commissioning primary-care delivered interventions and community-based weight loss interventions by clinical commissioning groups (CCGs) or local authorities who wish to target services at low-income women or at women in deprived areas. However, the current evidence only shows short-term effectiveness. Therefore to be effective in the longer-term, such interventions will need to be of a longer duration and supplemented with subsequent weight maintenance interventions. These interventions may need to be adapted to be effective amongst men, as studies mostly examined women.
- There is some evidence of multifaceted workplace delivered physical activity interventions having the potential to reduce inequalities in obesity by targeting lower occupational groups but the evidence base is small and inconsistent. More high quality studies are required in future research.

"The most effective public health interventions include primary-care delivered and community-based weight loss interventions (at least in the short-term)"

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. 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 adults. International Journal of Obesity 2014;1-8.

Cairns JM, Bambra C, Hillier-Brown FC, et al. Weighing up the evidence: A systematic review of the effectiveness of workplace interventions to tackle socio-economic inequalities in obesity. Journal of Public Health, 2014;doi: 10.1093/pubmed/fdu077.

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

FURTHER INFORMATION

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