

physical activity through changes to the nursery environment. Feasibility and acceptability have been demonstrated through Randomised Controlled Trials (RCT) in the USA. This study examined the feasibility and acceptability of adapting the NAP SACC intervention for the UK.

Methods A feasibility cluster RCT in 12 nurseries with 2–4 year olds in the southwest region of England. Focus groups and interviews with Health Visitors (community children's nurses), nursery staff and parents informed adaptation of the intervention for the UK. The intervention comprised: two staff workshops on physical activity and nutrition; Health Visitor support to review nursery practices against 80 areas of best practice, set goals and make changes; a digital media-based home component. Measures were assessed at baseline and post-intervention: zBMI, accelerometer-measured physical activity and sedentary time, diet, child quality of life, health care usage, parental and nursery staff mediators and quality of nursery environment. Fidelity and acceptability were assessed through observation and interviews analysed via thematic analysis.

Results Formative work resulted in the following adaptations: inclusion of an oral health component; changes to confirm with UK guidance; specialist workshop facilitators; and development of the home component. 168 (37%) eligible children were recruited from 12 nurseries. Interviews were completed with four Health Visitors, 17 nursery staff and 20 parents. The intervention was implemented with high fidelity, with two exceptions: one nursery did not implement the intervention due to staff workload; and the digital home component was used by just 12 (14%) parents. Intervention acceptability was high. A mean of seven staff per nursery attended each workshop. The workshops and Health Visitor contact were highly valued. The mean number of goals set was eight. Nursery changes included: menu modifications, reducing portion sizes and sugary snacks, role modelling physical activity and eating, and active story telling. The trial design and methods were highly acceptable. Descriptive analysis of the outcomes will be available by September 2017.

Conclusion NAP SACC UK is feasible and acceptable with the exception of the home component; effectiveness should be tested through a full-scale RCT.

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ASSOCIATIONS BETWEEN TYPOLOGIES OF NEIGHBOURHOOD ENVIRONMENTS AND ASSOCIATIONS WITH OBESITY: A CROSS-SECTIONAL STUDY

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Background Recent research has demonstrated that neighbourhood features such as fast-food outlets and supermarkets may co-occur. However, little research has investigated the combined influences of both the built food and physical activity (PA) environments and associations with body mass index and obesity. This study aims to use latent class analysis within a large UK adult population to investigate associations between the combined environment and obesity.

Methods Cross-sectional, individual-level data (n=22,889) from Wave 1 of The Yorkshire Health Study (2010–2012) were

used. Body mass index (BMI) was calculated using self-reported height and weight; obesity=BMI \geq 30. Neighbourhood was defined as a 2 km radial buffer; food outlets and physical activity facilities were sourced (2012) from Ordnance Survey Points of Interest (PoI) and categorised into 'fast-food', 'large supermarkets', 'convenience and other food retail outlets' and 'physical activity facilities'. Parks were sourced from Open Street Map. Latent class analysis (LCA) was conducted on these five environmental variables. Logistic regression was then conducted to predict obesity based on the five neighbourhood types identified within LCA. Models adjusted for age, gender, ethnicity, area-level deprivation and rural or urban classification of the neighbourhood.

Results A five-class solution fitted the dataset best and was interpretable. Neighbourhood typologies were labelled as; "low exposure" (19.0% of study population); "moderate exposure" (33.3%); "moderate PA, limited food" (12.2%); "saturated" (13.6%); "moderate PA, ample food" (21.2%). For associations with obesity, those within the low exposure typology were chosen as the exposure because low exposure to physical activity environments have the potential to reduce physical activity behaviours and although more debatable poorer access to the food environment may result in poorer dietary intake. Compared to the low exposure, one typology showed lower odds of obesity ("saturated", OR=0.86 [0.75,0.99]) and one showed increased odds of obesity ("moderate exposure, OR=1.18 [1.05,1.32].

Discussion Meaningful neighbourhood typologies were derived from a range of food and physical activity measures using latent class analysis which explained differences in obesity in large UK based sample of adults. This study suggests that neighbourhoods were not wholly unhealthy or healthy, they were characterised by neighbourhood features that are both health-promoting and health-constraining and this resulted in complex associations with obesity.

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CAN WE BETTER CAPTURE LONGITUDINAL EXPOSURE TO THE NEIGHBOURHOOD ENVIRONMENT? A LATENT CLASS GROWTH ANALYSIS OF THE OBESOGENIC ENVIRONMENT IN NEW YORK CITY, 1990–2010

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Background The growing availability of (non-)commercial historical datasets opens a new avenue of research on how long-term exposure to the neighbourhood environment affects health. However, traditional tools for longitudinal analysis (e.g. mixed models) are limited in their ability to operationalise long-term exposure. This study aims to summarise longitudinal exposure to the neighbourhood using latent class growth analysis (LCGA). Using the National Establishment Time-Series (NETS) 1990–2010, we analysed the trajectory of change in New York City (NYC) in the number of unhealthy food businesses – a potential indicator of an obesogenic environment.