Results Analysis produced three factor solutions for both the 'Causes' and 'Solutions'. These rich, shared accounts can be broadly summarised as: 'Causes' i) 'Unfair Society', ii) 'Individual Responsibility', iii) 'Hard Lives' and for 'Solutions' i) 'More than Money', ii) 'Guiding Choice', iii) 'Make Society Fair'.

No professionals were among respondents who exemplified (had a significant association with) 'Causes – Individual Responsibility' or 'Solutions – Guiding Choice' and no community participants exemplified 'Solutions – Make Society Fair'. There was an expected correlation between the 'Causes' and 'Solutions' factor solutions given the accounts identified.

Conclusion While there was some disagreement among professional participants, there was more of a focus on material, social and environmental factors. Community participants recognised a range of causes of worse health but even among those identifying structural causes as the main problem, structural solutions were not recognised. Despite the plurality of views there was broad agreement across the accounts about issues relating to money. While no easy solutions exist, addressing basic needs and the unpredictability of finances are seen as important for good health.

RF24 ENGAGING UNDERREPRESENTED WOMEN AS PARTICIPANTS IN STUDIES ABOUT HEALTH RISKS: LIFE STAGE DIFFERENCES IN MOTIVATIONS TO PARTICIPATE

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Background Universal interventions to reduce health risks can widen health inequalities. Targeted approaches, where an intervention is tailored to specific groups, may overcome this limitation. Women aged 16 to 34 years with lower socioeconomic status are hard-to-engage in research which limits our ability to understand how to address their health and lifestyle behaviours.

According to marketing research on spending, young adults aged 16 to 34 years pass through three main life stages: (1) dependency on older adults and individual interests, (2) leaving home and spending time with peers, (3) setting up home and having a family. The aim of this study was to evaluate how useful these life stage categories are for understanding women's motivations to participate in health research and for planning recruitment strategies.

Methods Nine focus groups with a total of 49 women (aged 16 to 34 years, without university education) were conducted. Women were recruited from different settings to mirror each of the three life stages above. Women in Further Education colleges represented category (1), women at work were for category (2) and mothers were for category (3). The focus groups explored participants' lifestyles, reasons for participating in the current study and beliefs about how research could be of value to them. Framework analysis was used to integrate theories from existing literature with themes emerging from the focus groups.

Results All women sought personal benefits from participation but these varied by life stage. Mothers wanted social opportunities away from caring responsibilities, while women at work and women in education valued monetary incentives more

highly. A common theme across the groups was the desire to escape boring activities. Women's motivations to participate in health research were not purely altruistic but to improve their own social capital. There were differences in how women would choose to spend free time.

Conclusion The life stages were useful for understanding women's motivations to participate in health research. Advertising strategies to engage women aged 16 to 34 years in health research should be tailored to fit their life stages, their goals for free time and the value they place on participation. These findings suggest that different strategies are required to optimise recruitment across this age range. One recruitment strategy does not fit all.

RF25 THE ROLE OF SOCIAL NETWORKS IN WEIGHT MANAGEMENT INTERVENTIONS DURING PREGNANCY AND POSTPARTUM FOR WOMEN WHO ARE OVERWEIGHT AND OBESE: A SYSTEMATIC REVIEW

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Background Maternal obesity is a growing public health issue. It is associated with pregnancy and birth complications and increased risk for childhood and long-term obesity. Interventions focusing on individual behaviour change have had a modest impact on clinical outcomes. There is increasing evidence that social networks are an important driver of obesity-related behaviours. The aim of this systematic review is to explore the effectiveness of lifestyle interventions that use social networks for weight management and to explore participants' experiences, and the process outcomes of these interventions.

Methods MEDLINE, PsychINFO, EMBASE, Cochrane, CENTRAL and CINAHL databases were searched as well as reference lists of included studies. Eligibility criteria included: intervention studies with a comparator group and qualitative studies/process evaluations of the included intervention studies; pregnant or postnatal women (<2 years) with BMI >25 kg/m²; a lifestyle intervention with a social network component; and a gestational or postpartum weight outcome. Protocol papers were included to aid extraction of intervention components and behaviour change techniques (BCTs). Articles were screened by two independent reviewers. Data extraction is ongoing and studies will be assessed for quality and risk of bias. BCTs and social network functions are also being coded by two reviewers and will be summarised in tables. We will assess heterogeneity and, if possible, a random-effects meta-analysis and a priori specified subgroup analyses will be conducted. We will carry out a narrative synthesis.

Results A total of 10 211 records were identified from databases with 73 full-text articles and another 25 identified from references screened. 30 articles (15 studies) were included. 8 potentially relevant studies are ongoing or results have not yet been published. Searches will be rerun before the final analyses. Preliminary findings are that the interventions are heterogeneous but most were group-based and delivered face-to-face. Interventions often advised on obtaining social support from existing social network (e.g. family), arranged support through created social networks

(e.g. group of mothers) and a few directly involved the participants' partner in the intervention. None used social network data to accelerate behaviour change among participants.

Conclusion Interventions often include social support from existing or created social networks as a BCT. There is a lack of interventions that purposefully utilise social network data. More qualitative research with participants and process evaluations are required. The findings of this review will be used to inform the development of a weight management intervention that mobilises social networks for behaviour change.

RF26 THE EFFECTIVENESS OF PHYSICAL ACTIVITY INTERVENTIONS FOR PEOPLE WITH OSTEOARTHRITIS AND COMORBIDITY: A META-ANALYSIS OF OBESITY

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Background Osteoarthritis (OA) is one of the diseases with the highest prevalence of comorbidity. Clinical guidelines recommend physical activity (PA) for people with OA irrespective of comorbidity. Research investigating the effectiveness of PA interventions in OA and comorbidity is needed. Objective: To synthesise existing evidence investigating the effectiveness of PA interventions in adults with OA and obesity.

Methods A systematic review with meta-analysis was conducted (PROSPERO Registration: CRD42017055582). Six electronic databases; MEDLINE, EMBASE, AMED, CINAHL, SportDiscus and CENTRAL were searched for studies from their inception to 29.03.17. Inclusion criteria were: randomised controlled trials (RCTs) comparing the effectiveness of any PA intervention to non-PA control group; including adults aged 45 years old and over with clinical or radiographic OA at any site; at least one of the comorbidities of interest (COPD, depression, diabetes, hypertension, obesity, T2DM); and measuring pain, physical function, quality of life, global health post intervention and adverse events. Included study risk of bias (ROB) was assessed using the Cochrane risk of bias tool. Two reviewers screened titles, abstracts and full text articles, checked data extraction, and carried out ROB assessment. Random-effects model meta-analysis pooled outcomes from sufficiently homogeneous studies to calculate effect sizes (Standardized Mean Difference (SMD) with 95% confidence interval (CI)). Meta-analysis findings of the OA and obesity subgroup are reported.

Results The literature search retrieved 8171 citations of which 14 studies (n=4224 participants) were included in the full review, with 9 (n=1382 participants) analysed in the OA and obesity subgroup. PA interventions included: aquatic, aerobic, strengthening and functional activity; of 1–18 months in duration.

Four studies of OA and obesity measuring either Western Ontario Osteoarthritis Index (WOMAC) pain, WOMAC function or Six Minute Walking Test (6 MWT) and were included in three meta-analyses. Best estimates showed PA to improve WOMAC pain (n=3 studies; n=547 participants; SMD=-0.09 (95% CI) -0.65, 0.47), improve WOMAC function (n=3 studies, n=415 participants; SMD=-0.35 (95% CI) -0.89, 0.18) and the 6 MWT (n=4 studies, n=573 participants;

SMD=-0.93 (95% CI) -0.49, 2.35). However, results were not statistically significant. There was substantial between-trial outcome heterogeneity ($I^2=89.4\%$ ($p=0.000$); 77.5% ($p=0.012$); 97.8% ($p=0.000$); respectively); results should be interpreted with caution. ROB domain judgements were generally either low or unclear. A small minority of judgements were at high risk of bias.

Conclusion Best estimates suggest small beneficial effects of physical activity on WOMAC pain, WOMAC function and the 6 MWT. Mixed effectiveness among individual RCTs was likely due to heterogeneous intervention types, intensity and duration.

RF27 HOW DOES CHANGING THE PLACEMENT OF FOOD PRODUCTS IN SUPERMARKETS INFLUENCE CUSTOMERS' DIETS?

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Background The dietary choices of women have a major influences on their children's diets, and childhood diet quality tracks into adulthood. Supermarkets are a major source of food for families, yet understanding of how the environment within supermarkets influences food choices is sparse. Evaluating environmental strategies to enable families, particularly those from disadvantaged backgrounds, to make healthier food choices is necessary to improve diet, reduce obesity prevalence and improve population health. We assessed the effect of improving the availability and placement of fruit and vegetables in supermarkets, and removing confectionery from checkouts, on the diet quality of women of childbearing age from disadvantaged backgrounds.

Methods This study was the pilot phase of a natural experiment with a prospective matched cluster design. The setting was a discount supermarket chain in England. The intervention had three components: i) new fresh fruit and vegetable section at store entrances, replacing smaller display at the back ii) frozen fruit and vegetables in the first aisle, and iii) removal of confectionery from checkouts. Women customers aged 18 to 45 years, with a store loyalty card, who regularly shopped at three intervention and three matched-control stores in England were recruited. Data on women's diet quality and demographic characteristics were collected via telephone survey before refurbishment, and three months after. Linear regression models adjusting for baseline diet were used to assess whether diet quality improved in women who shopped in intervention stores.

Results A total of 150 women were recruited (56 from intervention stores and 74 from control stores), and 138 provided complete data at baseline and follow-up three months after refurbishment. Participant characteristics at baseline were similar in intervention and control groups; median age was 36 years (IQR 31–41), 91% were white British and 55% were educated to GCSE level or below. Almost half (41%) reported that the discount supermarket chain was their primary supermarket. Diet quality was higher among intervention than control participants at three months: $\beta=0.25$ SD (95% CI 0.01, 0.49), equivalent to four additional portions of green salad per week. This relationship weakened slightly after adjustment