

Participants preferred individual self-monitoring and goal-setting to social features of the app.

There were no significant changes in sedentary time; participants perceived a need for more opportunities for breaks in the workplace. Mental health-related quality of life improved from baseline to month 8 (SF-12 mental component score +1.75 points, 95% CI 0.28–3.23). Despite interview-reported improvements in health and wellbeing, survey-assessed changes in physical health-related quality of life, perceived stress and perceived productivity were not statistically significant.

**Conclusion** mHealth technology is a potentially impactful, feasible and acceptable intervention for increasing PA in the police force, particularly for less active officers and staff. The intervention was less useful for reducing sedentary time and the impact on health, wellbeing, stress and productivity is unclear.

### OP109 MULTIPLE RISK BEHAVIOUR INTERVENTIONS IN OVERWEIGHT AND OBESE ADULTS: SYSTEMATIC REVIEW AND META-ANALYSIS

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10.1136/jech-2019-SSMabstracts.69

**Background** Risk behaviours (e.g. unhealthy diet, lack of physical activity (PA)) are associated with increased risk of chronic disease and mortality. The majority of adults in England engage in two or more risk behaviours, which tend to co-occur in individuals. There are also strong socio-economic gradients in key health behaviours. A systematic review of interventions targeting multiple risk behaviours (MRBs) in general adult populations found small improvements in diet, PA and smoking. In this systematic review, we aimed to evaluate the effectiveness of MRB interventions in overweight or obese adults (PROSPERO CRD42016051589).

**Methods** Six databases were searched up to October 2016 with no language restrictions, and references of relevant systematic reviews were screened. Randomised controlled trials (RCTs) of interventions targeting two or more risk behaviours in obese or overweight adults ( $\geq 16$  years) were eligible if they reported behavioural outcomes. Quality of RCTs was assessed with the Cochrane risk of bias tool. Where possible, random-effects meta-analyses were conducted. Data not included in the meta-analyses were narratively synthesised. Associations between study factors and effectiveness were explored through meta-regression.

**Results** In total 4392 records were identified, 219 full texts screened and 51 RCTs included. All studies targeted diet and PA, with weight management the most common objective. This contrasts with our review in general adult populations which found smoking and alcohol were often targeted alongside diet and PA and the most common aim was healthy lifestyle promotion. Few interventions included components other than education, training and enablement. There were small changes in fruit and vegetable (MD 27.88 grams, 95% CI 13.01 to 42.76,  $I^2=51.5\%$ ), fat (SMD -0.33, 95% CI -0.51 to -0.15,  $I^2=87.7\%$ ) and calorie intake (MD -282.89, 95% CI -426.01 to -139.78,  $I^2=91.6$ ) and total PA (SMD 0.21,

95% CI 0.01 to 0.41,  $I^2=87.2\%$ ) at the end of interventions. Equivocal benefits were identified for other behavioural outcomes. Generally improvements declined at follow-up and when compared with an active control. We found no associations between study factors and effectiveness at the end of interventions.

**Conclusion** Interventions were effective for some behavioural outcomes in obese and overweight adults, but improvements were small and declined over time. Studies were limited in their approach, with most adopting ‘agentive’ strategies which make substantial demands on individuals to initiate and sustain behaviour change. Research is needed into alternative approaches which target the environmental conditions that influence health behaviours and make healthier choices easier for individuals.

### OP110 BODY MASS INDEX TRAJECTORIES AND PROSTATE CANCER RISK IN THE EPICAP STUDY

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10.1136/jech-2019-SSMabstracts.70

**Background** High body mass index (BMI) has been inconsistently associated with prostate cancer (PCa) risk. Recent studies suggest that BMI trajectory modeling provides a more robust substitute method to predict cancer risk compared to static measures of BMI. However, only four studies have investigated lifetime BMI and PCa risk. We analyzed the effects of life course BMI trajectories on PCa risk based on data from the Epidemiological study of Prostate Cancer (EPICAP).

**Methods** EPICAP is a French population-based case-control study that enrolled 819 incident cases of PCa diagnosed in 2012 and 2013, aged less than 75 years old and residing in the d  partement of H  rault, France. Controls were 879 age-matched men living in the same geographic area. Face to face interviews, using a standardized computerized questionnaire, gathered information about socio-demographic characteristics, medical history, lifestyle factors, physical activity, residential and occupational history. Anthropometric indicators have been collected through the questionnaire (self-report of height at 18 years old and weight every decades) or anthropometric measures at time of interview (height, weight, waist and hip circumferences). BMI trajectories were determined using group-based trajectory modeling to identify groups of men with similar patterns of BMI change through adulthood. Logistic regression models were used to assess odds ratios (ORs) for the associations between BMI trajectories and PCa risk. Analyses were systematically adjusted for age, family history of PCa and ethnicity. Stratified analyses were conducted by PCa aggressiveness according to the Gleason score. Seeking for relevant interaction between smoking status and BMI trajectories and given that smoking is a major risk factor for many types of cancer, known to decrease obesity, we performed stratified analyses according to smoking status.

**Results** We identified four BMI trajectories groups: ‘stable normal BMI’ (29.7%), ‘normal BMI to overweight’ (50.7%), ‘normal BMI to obesity’ (17.4%) and ‘overweight to obesity’ (2.2%). Men who had a BMI in the normal range at age 20