

consumed on the heaviest drinking day. In addition, ordinary least squares regression analyses were used, modelling the proportion non-drinking as the independent variable, and the proportion binge/mean units as the dependent variable.

Results Rates of non-drinking increased from 18% [95% CI 16% to 22%] in 2005 to 29% [25–33%] in 2015 (test for trend; $p < 0.001$), largely attributable to increases in lifetime abstinence. Not drinking in the past week increased from 35% [32–39%] to 50% [45–55%] ($p < 0.001$). Significant linear increases in non-drinking were found among most sub-groups including healthier sub-groups (non-smokers, those with high physical activity and good mental health), north and south regions, in full-time education, and employed. Among white participants, non-drinking increased from 14% [12–17%] in 2005 to 20% [17–24%] in 2015. No significant increases in non-drinking were found among smokers, ethnic minorities and those with poor mental health. At the population-level, a one percentage point increase in non-drinking, predicted a 0.22 reduction in mean alcohol units consumed [95% CI -0.32 to 0.12], and a 1.06 percentage point decrease in the proportion binge drinking [95% CI 1.56 to 0.54]

Conclusion Increases in non-drinking were found with variables less commonly associated with non-drinking, suggesting this behaviour may be becoming more normative. This trend is to be welcomed from a public health standpoint and should be capitalised on going forward. Drinking and smoking continue to cluster and could be targeted in tandem. Future research should explore attitudes towards alcohol among young people.

OP77

CAN MENTAL HEALTH COMPETENCE BUFFER AGAINST THE HIGHER RISK OF SMOKING INITIATION AMONG TEENAGERS WITH PARENTS WHO SMOKE? FINDINGS FROM THE UK MILLENNIUM COHORT STUDY

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Background Most smokers initiate before the age of eighteen, and smoking in adolescence is strongly influenced by parental smoking habits. Despite this, few studies have examined factors which may protect teenagers against the risk of having a smoking parent. We investigated whether skills-based components of positive mental health in childhood (Mental Health Competence, MHC) modified the association between parent and teenager smoking, using contemporary data from the UK-representative Millennium Cohort Study (~18 000 children, born 2000–2002; analytic sample: $n = 10,133$).

Methods Cohort members (CMs) reported whether they had ever smoked cigarettes or e-cigarettes at 14 years(y). A dichotomised variable indicated whether one or both parents reported their own tobacco use when CMs were 11 y. A four-class latent measure of MHC captured learning skills and prosocial behaviours at 11 y: High, High-Moderate, Moderate, Low.

We examined effect modification in two ways. First, we compared risk differences (RD; estimated using binary regression) for CM smoking according to parental smoking, across levels of MHC. Second, we estimated RDs for CM smoking

according to combinations of parental smoking and MHC. Confounding by socio-economic and demographic characteristics and parent's mental health was adjusted for. Survey weights accounted for sample design and attrition; multiple imputation addressed item missingness.

Results Similar proportions of CMs had ever smoked cigarettes (17%) and e-cigarettes (18%), although overlap was moderate (40% who had smoked either had smoked both). CMs were more likely to have ever smoked cigarettes if at least one parent smoked (RD: 16%[13–184]) (baseline: no parents who smoke[11%]). This elevated risk was observed across all levels of MHC, but was greatest for Low MHC (RD: 21%[11–31]) (RDs in other MHC groups: 7%–12%). When combining parental smoking and MHC (baseline: no smoking parent, high MHC), those with Low MHC and a smoking parent had a RD of 28%(20–36). This was higher than the sum of RDs in CMs with Low MHC but a non-smoking parent (7%[1–14]) and with High MHC but a smoking parent (11% [7–15]). Thus, Low MHC carried an excess risk. There was little evidence of effect modification by Moderate or High-Moderate MHC. Results were similar for e-cigarettes.

Conclusion The association between parent smoking and teenage smoking initiation was considerably stronger in those with Low MHC in contemporary, UK-representative data. These results require replication in other populations, and at older ages (examining progression to regular smoking), but imply that MHC improvement before transition to secondary school holds potential to buffer against an important smoking risk factor.

The views expressed are those of the authors and not necessarily those of the funders.

Physical activity

OP78

ARE QUALITY OF LIFE AND FAMILY EXPENDITURE ON PHYSICAL ACTIVITY ASSOCIATED WITH PHYSICAL ACTIVITY IN 2–4-YEAR-OLD CHILDREN?

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Background Despite the well-described health benefits associated with physical activity, many children do not engage in the recommended level of physical activity. To inform public health interventions, there is a need to determine factors associated with physical activity in children. We examined the extent to which the Pediatric Quality of Life Inventory (PedsQL) and family expenditure on physical activity were associated with minutes spent physically active and in moderate-to-vigorous physical activity (MVPA) per day in young children.

Methods Cross-sectional study with a sample of 81 children aged 2–4 years in the South West of England, taking part in the Nutrition and Physical Activity Self-Assessment for Child Care (NAPSACC UK) feasibility randomized controlled trial. We ran descriptive statistics, along with Student t-tests to determine differences by gender, age and parental education and compare physical activity on nursery and non-nursery days. The associations between physical activity, PedsQL scores (physical and psychosocial) and family expenditure on physical

activity were assessed using mixed effects linear regression models in Stata 14.2.

Results 88.89% of children did not meet the recommended 180 min daily physical activity. Children spent a mean (SD) of 141.90 (33.10) minutes per day being physically active with 22.21 min per day (SD=9.87) in MVPA. Children spent more minutes being active on nursery days than non-nursery days (146.89 vs 137.22, $p=0.05$). Boys were more physically active than girls, spending 148.95 vs 133.93 min in daily activity ($p=0.04$). Older children were more physically active than younger children ($p=0.01$). There were no differences in physical activity by parental education. Approximately half (50.62%) of the sample spent less than £9.00 weekly on their 2–4-year-old's physical activity. Children scoring in the highest third of PedsQL physical functioning scores had higher levels of MVPA (4.06 95% CI -0.41 to 8.54, p -value 0.07). There was no evidence of a beneficial association between positive PedsQL psychosocial scores, or higher parental expenditure on physical activity, with more minutes spent being active or in MVPA.

Conclusion Physical activity was below the recommended 180 min of daily physical activity for this age group. Children were more physically active on nursery days. There is weak evidence of an association between better PedsQL physical scores and higher levels of MVPA. More time spent being physically active and in MVPA was not associated with higher expenditure on physical activity in this age group, but further examination in larger datasets is needed.

OP79

THE EFFECT OF MOVING TO EAST VILLAGE (THE FORMER LONDON 2012 OLYMPIC GAMES ATHLETES VILLAGE) ON PHYSICAL ACTIVITY AND ADIPOSITY LEVELS

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Background There has been increasing interest in whether the built environment influences health behaviours, but robust longitudinal evidence is limited. We assessed the effect of moving into East Village (the former London 2012 Olympic Games Athletes Village), a neighbourhood built on active design principles, on levels of physical activity (PA) and adiposity among adults.

Methods A cohort of 1278 adults (16+) seeking to move into social, intermediate (a mixture of shared ownership, shared equity, affordable rent), and market-rent East Village accommodation were recruited in 2013–2015, and followed up after two years. Objective measures of PA using accelerometry (Acti-Graph GT3X+), body mass index (BMI) and bioelectrical impedance (fat mass %) were made. We examined change in levels of PA and adiposity, using multilevel models adjusting for sex, age group, ethnicity, housing sector (fixed effects) and household (random effect), comparing those who moved to East Village (intervention group) with those who lived outside

East Village (control group). Effects by housing sector and weekdays versus weekends for PA were also examined.

Results 877 adults (69%) were followed-up, half had moved to East Village. Moving to East Village was associated with a small increase in daily steps (151, 95% CI -233 , 534), more so in the intermediate sector (399, 95% CI -211 , 1009) than in the social and market-rent sectors, but effects were not statistically significant. There were no differences in time spent in moderate-to-vigorous PA (MVPA) or any appreciable weekday versus weekend effects. There was no evidence of differences in time spent in light PA or sedentary time both overall and by housing sector with the exception of the market-rent group in whom moving to East Village was associated with a decrease in light PA (-13.0 mins, 95% CI -24.7 , -1.2 mins). There were no effects of moving to East Village on BMI or fat mass% overall or by housing sector.

Conclusion At two-year follow-up, moving to East Village, a neighbourhood designed for healthy active living, did not have beneficial, consistent effects on objectively measured physical activity or adiposity of public health importance.

OP80

EFFECTIVENESS OF EUROPEAN FANS IN TRAINING (EUROFIT): RANDOMISED CONTROLLED TRIAL IN ENGLAND, PORTUGAL, THE NETHERLANDS AND NORWAY

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Background Despite widespread knowledge about the risks of unhealthy lifestyles, men can be reluctant to engage in lifestyle change programmes. Building on the success of the Scottish Football Fans in Training, we developed EuroFIT, a men-only, group-based lifestyle-change program to improve physical activity and reduce sitting time.

Our aim was to investigate whether EuroFIT can help men aged 30–65 years with a self-reported BMI ≥ 27 kg/m² to increase physical activity and decrease sitting time 12 months after baseline.

Methods We conducted a pragmatic, two-arm, randomised controlled trial in 15 football clubs in the Netherlands, Norway, Portugal and the UK (England). We measured participants at baseline, post-program and 12 months after baseline. Primary outcomes were objectively assessed changes in total physical activity (steps per day) and total sedentary time (minutes per day spent sitting). Secondary outcomes include self-reported food intake, weight, resting systolic and diastolic blood pressure and cardio-metabolic blood biomarkers. We conducted linear mixed effects regression analyses, including random effects for country and football club, and fixed effects for study group and baseline measurement.

Results 560 men were allocated to the intervention and objective measurements were achieved for 451 (81%) at 12 months; 553 were allocated to the control and objective measurements were achieved for 470 (83%). At 12 months, the mean difference in step count, adjusted for baseline steps and