RF3 ARE MULTIPLE RISK BEHAVIOUR INTERVENTIONS EQUALLY EFFECTIVE FOR ALL ADOLESCENTS? EXAMINING SUBGROUP EFFECTS BY SOCIOECONOMIC STATUS

L Tinner*, R Campbell, D Caldwell, G MacArthur, M Hickman. *Population Health Sciences, University of Bristol, Bristol, UK*

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Background Multiple risk behaviour (MRB) refers to two or more risk behaviours including smoking, drinking alcohol, poor diet and unsafe sex. Such behaviours are known to co-occur in adolescence.There are increasing public health interventions that address MRB as opposed to isolated behaviours. However, little is known about differential intervention effects by socioeconomic status (SES). There is a need to examine these effects in order to reduce health inequalities. The aim of this study was to examine universal public health interventions targeting adolescent multiple risk behaviour forsubgroup effects by SES.

Methods Two Cochrane systematic reviews that focused on adolescent MRB were screened to identify universal interventions that reported SES. Study authors were contacted, and outcome data requested stratified by SES and intervention status. Risk behaviour outcomes: alcohol use, smoking, substance use, unsafe sex, overweight/obesity, sedentarism, peer violence and dating violence were examined in random effects meta-analyses and subgroup analyses performed to explore differences between high SES and low SES adolescents.

Results Of 50 studies reporting universal interventions, 15 also reported having measured SES. Of these 15 studies, four study authors provided additional data for subgroup analyses. For alcohol use, the point estimates suggest that SES does not explain the effect of the intervention, as the direction of effect is the same for both high SES (RR 1.28, 95% CI 0.97, 1.69) and low SES (RR 1.14, 95% CI 0.97, 1.34). The point estimates for smoking behaviour are indicative of a differential intervention effect in favour of the low SES group (RR 0.83, 95% CI 0.66, 1.03) versus the high SES group (RR 1.10, 95% CI 0.78, 1.56). SES was not an explanatory factor for the intervention effect on substance use as the direction of effect in the high SES group (RR 1.13, 95% CI 0.83, 1.53) and the low SES group (RR 1.26, 95% CI 0.83, 1.92) was the same. Tests for subgroup differences showed no evidence of difference for all behaviour outcomes.

Conclusion The majority of studies identified did not report having measured SES. Findings from the four studies included in the subgroup analysis indicate the potential for interventions to differentially effect different SES groups. There is a need for routine reporting of demographic information within studies so that stronger evidence of effect by SES can be demonstrated and that interventions can be evaluated for their impact on health inequalities.

RF4 'COMMON VERSUS SPECIFIC LIABILITY FOR SUBSTANCE ABUSE IN EARLY ADULTHOOD: A GENETICALLY INFORMED APPROACH'

[1]E Iob*, [2]T Schoeler, [2]J Pingault. *[1]Department of Epidemiology and Public Health, University College London, London, UK; [2]Department of Clinical, Educational and Health Psychology, University College London, London, UK*

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Background Young people experiencing psychological or behavioural problems are more likely to engage in poly-substance use. The common liability theory posits a common liability to all substance addictions. Such shared risk factors may therefore explain the observed patterns of comorbid substance use, where a common genetic susceptibility could underlie this co-occurrence. However, to date most research has failed to measure the aforementioned common liability, and the first genome-wide association studies (GWAS) have identified genetic variants specific to each substance rather than common ones. Therefore, the aim of this project is two-fold: firstly, to construct a new longitudinal measurement model of common liability to substance use; secondly, to investigate specific versus common genetic influences on substance use applying polygenic scoring.

Methods The sample includes 6399 young adults from the Avon Longitudinal Study of Parents and Children. Self-reported data on substance use (i.e. tobacco, alcohol, marijuana, and other illicit drugs) was collected at age 17.5, 20, and 22 with validated questionnaires. A Trait-State-Occasion model applied within Structural Equation Modelling (SEM) was used to identify a common trait factor for substance use across the three time points, as well as occasion- and drug-specific latent factors. Polygenic scores were calculated using GWAS results on substance use and related psychopathological, behavioural, and cognitive phenotypes. All analyses were conducted using *R* and *PRSice* software.

Results In Study 1, the Trait-State-Occasion model was tested using Robust Maximum Likelihood Estimation, which accounted for the non-normal distribution of the substance abuse measures. The model fitted the data well, $\chi 2$ (33) =100.572, $p<0.001$, *CFI*=0.987, *RMSEA*=0.018, *SRMR*=0.027. The variance of the trait factor was 0.155 [95% CI 0.124; 0.185]. On average, the model R-Squared was 70%, with residuals being 30%. The total variance explained by the model was further decomposed into trait, occasion, and drug-specific variance, which was equal to 16%, 11%, and 44% respectively. Study 2 (ongoing) will test a full SEM model by regressing the polygenic scores on both the common trait and drug-specific factors.

Conclusion The results of Study 1 provided evidence for a common liability to substance use, which is partly shared across different drugs and stable over time. This therefore suggests that both common and drug-specific susceptibility should be considered where examining genetic and environmental risk factors for substance use. Study 2 will reveal the influence of genetic variants associated with various psychopathology related-traits on both common and drug-specific dimensions of substance use.

RF5 DIFFERENT CLUSTERS OF RISK AND ADVERSE SEXUAL HEALTH OUTCOMES IN THE BRITISH POPULATION

MW Waltenberger*, AP Parkes, KM Mitchell. *Social Relationships and Health Improvement, Social and Public Health Sciences Unit, Glasgow, UK*

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Background Although many people enjoy good sexual health, others experience adverse outcomes including: sexually transmitted infections, sexual function problems and sexual coercion. Little is known about whether different combinations of adverse outcomes are present in different groups of people,