OP68 THE EFFECT OF HEALTH SHOCKS ON IMPOVERISHMENT IN SOUTH KOREA

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Background The coexistence of illness and poverty is a very common phenomenon over the world, and is one of the most intolerable forms of damage to a person's life and social stability. South Korea has the highest out-of-pocket burden for medical expense among OECD member countries and has no formal sickness benefit system, greatly increasing the risk of poverty due to sudden illness (a 'health shock). In this study, we aimed to identify the causal effect of sudden illness on impoverishment up to four years after the experience of such a health shock.
Methods For the purpose, we analyzed longitudinal data from 2007 to 2012 of 5175 households who participated in the representative Korean panel study, the Korean Welfare Panel Study. In this study, a health shock was defined as an event which increased the household's out-of-pocket medical expenses by at least three times over the previous year. A generalized estimating equation (GEE) with logit link function was used to evaluate the association between health shocks and repeated measured poverty. Because the health shock variable was not based on a random process, potential confounding and selection biases were accounted for by developing a propensity score for group allocation. All analyses were performed using *Stata* 11.0.
Results Of the 5175 households eligible for analysis, 1252 households (24.2%) were classified as who had experienced health shock. Generally, baseline characteristics (such as age, sex, subjective health, income, educational and marital status) were well balanced between groups of allocation. The results showed that a health shock increased the risk over that following four years of relative poverty by 1.18 times (OR 1.18, 95% CI 1.02 to 1.36, p 0.022). The risk of official poverty, defined as becoming a recipient of public assistance, increased by 1.54 times (OR 1.54, 95% CI 1.25 to 1.89, $p<0.001$). These findings were essentially unchanged even after performing a rigorous propensity score analysis.
Conclusion This study suggests that policy is needed for income stability to prevent impoverishment due to a health shock. Further research is needed to clarify several issues, including a definition of health shock, the role of coping strategies, and the detailed mechanism of medical impoverishment.

OP69 DO 'ENVIRONMENTAL BADS' SUCH AS ALCOHOL, FAST FOOD, TOBACCO, AND GAMBLING OUTLETS CLUSTER AND CO-LOCATE IN MORE DEPRIVED AREAS IN GLASGOW CITY, SCOTLAND?

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Background Recent research on the determinants of health-related behaviours, such as smoking, heavy drinking and poor diet, has begun to focus on physical environmental factors, such as the retail environment, and associations with area level deprivation. This study utilises an innovative application of spatial cluster analysis to examine the socio-spatial patterning of various categories of outlets, selling potentially health-damaging goods/services (alcohol, fast food, tobacco and gambling) within Glasgow. This novel application advances existing methods for quantifying spatial access to retail outlets as it is not restricted by pre-defined boundaries.
Methods Outlet address data was obtained from Glasgow City Council for 2012 (tobacco, fast food), and 2013 (alcohol, gambling) and mapped using GIS software. SaTScan, a well-established cluster analysis tool, was used to detect spatial clusters of outlets and ascertain their statistical significance (at the 5% level). Analysis was performed for all categories of outlets combined (to examine co-location), and individually for alcohol, fast food, tobacco, and gambling outlets. Software provided output for clusters centroids, size (radius) and statistical significance. Clusters were assigned a Scottish Index of Multiple Deprivation 2012 Income score; quintiles of income deprivation were calculated from 1 (most deprived) to 5 (least deprived) and compared for numbers of clusters.
Results Across the city, there were 28 areas where all four types of outlets were co-located; and for individual outlets, there were 20 alcohol outlet clusters, 16 fast food outlet clusters, 15 tobacco outlet clusters and 5 gambling outlet clusters. Co-occurrence clusters were more common in deprived areas, with ten clusters in the more deprived quintile compared to one in the most affluent quintile. In terms of individual categories of outlet, poorer areas contained the largest number of alcohol, fast food, tobacco and gambling outlet clusters. Co-location of individual types of outlets in similar geographical areas was also evident, for example: located in the central business district, other retail, office, service hubs, and also deprived areas in the 'east end'.
Conclusion The study makes use of a robust technique to detect clusters and adds to evidence that deprived areas have increased access to potentially health damaging goods/services. Such research can inform interventions to tackle the co-occurrence of health behaviours, and findings could aid authorities to develop policy/planning regulations appropriate for areas in greatest need.

Mental health and wellbeing

OP70 COULD POPULATION PREVALENCE AND SOCIO-ECONOMIC INEQUALITIES IN CHILDREN'S MENTAL HEALTH PROBLEMS BE REDUCED BY INCREASING PHYSICAL ACTIVITY? A POLICY SIMULATION IN THE UK MILLENNIUM COHORT STUDY (MCS)

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Background Greater moderate-to-vigorous physical activity (MVPA) is associated with lower risk of some child mental health problems (CMHP). However, there is no evidence showing the potential population impact of increasing MVPA on CMHP (prevalence and inequalities). We used data from the UK Millennium Cohort Study (~18 000 children born

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2000–2002), to model a hypothetical MVPA intervention scenario, simulating universal achievement of the government's MVPA target of 60 min (m) MVPA per day.

Methods 6344 children had MVPA (measured using accelerometers at 7 years[y]); of these, 4590 had data on outcome (CMHP), exposure (socio-economic circumstances) and potential confounders. CMHP at 11 y were measured using parent-reported Strengths and Difficulties Questionnaire (SDQ) total score, dichotomised using an established cut-off.

Predicted probabilities of CMHP were estimated in logistic marginal structural models, weighted for attrition, adjusted for MVPAand baseline and intermediate confounding (including externalising behaviours at 7[y], to account for potential reverse causality between MVPA and some aspects of CMHP, such as hyperactivity).Inequalities were assessed using Risk ratios (RRs) and differences (RDs) [95% CIs], according to household income quintiles. Intervention was simulated by re-estimating predicted probabilities after modifying theMVPA variable.

Results 49% of children achieved the 60 m MVPA target, with greater activity levels observed in lowest (65 m) compared to highest (62 m) income quintile. Greater MVPA was associated with increased risk of CMHP (RR 1.003 [0.999–1.007]), and with externalising problems in particular (RR 1.009 [1.005–1.013]).

Overall prevalence of CMHP was 12.2%, with relative and absolute inequalities between lowest and highest income quintiles (RR 2.6 [1.5–3.7]; RD 11.7 [6.0–17.4]).

Simulation of the intervention led to 96% achievement of the 60 m MVPA target (30 m average increase for all children, assuming 100% uptake). CMHP prevalence increased to 14.1%. Relative inequality decreased slightly (RR 2.5 [1.5, 3.6]), and absolute inequality increased (RD 13.3%; [6.6, 20.0]). In sensitivity analyses with internalising problems as the outcome, greater MVPA decreased absolute inequality in CMHP, but not relative risk or prevalence.

Conclusion Findings based on a UK-representative sample of children with objective MVPA data and a validated measure of CMHP, imply that universal achievement of the national MVPA target may not reduce prevalence in CMHP or absolute inequalities. However, these findings are likely subject to reverse causation (despite adjustment for earlier externalising behaviours). Further analyses will examine these relationships in detail, including differentiating aspects of CMHP (emotional, peer, conduct and hyperactivity subscales), using teacher-reported SDQ, and positive mental health outcomes.

OP71 CAN YOU TURN ON A LIGHT SWITCH? EXPLORING WHETHER CHANGES TO DISABILITY-RELATED WELFARE PAYMENTS IN THE UK DISADVANTAGE CLAIMANTS WITH A MENTAL ILLNESS

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Background The experiences and outcomes of welfare claimants with a mental illness following recent welfare reforms in the United Kingdom (UK) have been explored as part of larger studies on the impact of such changes on people with disabilities but detailed evidence for this group of claimants is limited. This research explores the experiences and assessment outcomes of claimants with a mental illness undergoing changes to their disability-related welfare payments in the UK.

Methods Experiences of welfare reform were first explored in interviews with claimants. Participants reported that they felt disadvantaged by having a mental illness when trying to obtain financial support compared to if they had a physical health condition (see results). This perception of differential outcomes was then explored through administrative data analysis.

Individuals with a mental illness (n=18) living in Leeds, England were recruited via community support organisations and interviewed between January and April 2017. Data were analysed in Nvivo using a thematic analysis framework. The final sample consisted of individuals aged between 25–65, experiencing a range of mental health conditions including depression, anxiety, psychosis, bipolar affective disorder and borderline personality disorder.

Department of Work and Pensions administrative data for all claimants changing from Disability Living Allowance (DLA) to Personal Independence Payments (PIP) between 2013–2016 (n=470, 800) were then extracted to explore whether claimants with mental illness experienced differences in the level of financial support they received under the new system compared to claimants with non-psychiatric conditions. Odds ratios were calculated in Stata 15.1 to explore differences in assessment outcomes – whether existing financial support (DLA) increased, stayed the same or decreased under the new system (PIP) for claimants with psychiatric compared to non-psychiatric conditions.

Results Interviewees reported that the updated eligibility criteria associated with changes to welfare payments did not appear to take account of the difficulties associated with mental health and described an assessment process focused primarily on physical capability. Further analysis using data on claimants transferring from DLA to PIP revealed that individuals with psychiatric conditions were 1.31 (95% CI 1.29, 1.32) times more likely to have their financial support reduced or withdrawn entirely when transferring from DLA to PIP, compared to claimants with non-psychiatric conditions.

Conclusion These findings provide a starting point for exploring whether recent reforms to welfare payments in the UK have disadvantaged claimants with a mental illness and raise questions as to whether there is parity of esteem between mental and physical health in the welfare system. Given ongoing concerns regarding the marginalisation of people with mental illness, further research is needed to confirm these findings and to address any inequalities that may be present.

OP72 BEING ALONE TOGETHER: A LONGITUDINAL DYADIC ANALYSIS ON THE IMPACT OF LONELINESS AND RELATIONSHIP QUALITY ON WELLBEING IN COUPLES COPING WITH DISABILITY

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Background Couples coping with disability are at an increased risk of experiencing poor wellbeing, this may be due to the potentially harmful effects of loneliness and poor relationship quality that this population are frequently exposed to. Both

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