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Health and inequality

OP66 **#INCOME TRAJECTORIES AND HEALTH: A LATENT CLASS GROWTH MIXTURE MODEL APPROACH IN UNDERSTANDING SOCIETY (UK HOUSEHOLD LONGITUDINAL STUDY)**

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Background Most studies examining income and health have used average income at one point in time or low income over time. These are global measures and cannot really capture change in income over time. In this study, we propose a novel approach to studying long-term income trajectories and how they influence health measured by biomarkers to capture different dimensions of health, which might be influenced by different income trajectories. To this end, we use Latent Class Growth Mixture Models (LCGMM) to identify the types of household-level income trajectories that are associated with cholesterol, glycated haemoglobin (HbA1c), fibrinogen, c-reactive protein (CRP), haemoglobin (Hgb), and Gamma-Glutamyl Transferase (GGT), in the UK population from 1991–2010.
Methods We use household income (quartiles/year), Waves 1–18 of the British Household Panel Study (a stratified random sample), and biomarkers from Wave 3 of the Nurse Health Assessment component of the UK Household Longitudinal Survey into which BHPS is now incorporated. We select individuals with at least nine waves of income data and biomarker information (n=1449). Biomarkers are used as logged continuous measures. We fit LCGMMs (estimator: Maximum Likelihood with robust S.E.) using MPlus 8.0. The Bayesian Information Criterion and the Bootstrapped Likelihood Ratio Test are used to assess model fit and determine the number of classes. We run LCGMM with biomarkers as distal outcomes, using the manual BCH procedure, to test equality of means across classes. We control for age, gender, education, employment, household type, self-rated health at baseline (Wave 1 of BHPS). We conduct sensitivity analyses to check whether results change when removing respondents using medications found to affect biomarker values.
Results Eight types of income trajectories are identified representing both stability and volatility: 'stable high' (11.8%); 'high-decreasing-medium' (12.8%); 'low-increasing-medium' (15.7%); 'medium-increasing-high' (11.6%); 'stable medium' (17.9%); 'stable low' (15.7%); 'high-medium-low' (3.7%); 'medium-low' (10.8%). After adjusting for confounders, we find that the group of individuals living in low-income households throughout the twenty years ('stable low') have a higher logged Total-HDL cholesterol mean ratio (LogM=0.865; M=~2.63), compared to both the 'medium-increasing-high' (LogM=0.862; M=~2.38; LogM diff.=0.103, S.E.=1.993) and 'high-medium-low' (LogM=0.862; M=~2.37; LogM diff. =0.102, S.E.=1.969) groups. These differences are not significant when removing respondents using statins. Findings for other biomarkers will be presented.
Conclusion We find differences in cholesterol between: 1) persistent poverty and upward volatility; 2) persistent poverty and downward volatility. Our results suggest that persistent poverty is more harmful to household members, compared to fluctuations and eventual poverty. Some of our other health measures respond differently to income stability and variability.

OP67 **#RISK FACTORS FOR FOOD INSECURITY AMONG ADULTS IN ENGLAND, WALES, AND NORTHERN IRELAND IN 2016**

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Background The rapid rise in the number of people using food banks since 2010 has raised concerns about whether food insecurity is rising in the UK. Investigations into this problem have focused on the characteristics of food bank users, precluding identification of risk factors for food insecurity in the wider population. Using data from the 2016 Food and You Survey (FYS), the objective of this study was to identify socio-demographic characteristics associated with food insecurity in the UK and how risk has changed since food insecurity was last measured in the 2003–2005 Low Income Diet and Nutrition Survey (LIDNS).
Methods Data from the FYS, a nationally representative survey of adults aged 16+across England, Wales, and Northern Ireland (n=3001) were accessed from the UK Data Service. Food insecurity was measured using the USDA Food Security Module and coded into marginal, moderate, and severe levels. The prevalence of each level was examined across age, gender, work status, disability, income quartile, education, marital status, and family characteristics. The odds of increasing severity of food insecurity were calculated using a generalised ordered logistic regression model. Data from FYS were merged with the 2003–2005 LIDNS. Using Coarsened Exact Matching, the probability of low-income households being food insecure was compared between survey years, and across household characteristics.
Results In 2016, 7.74% (95% CI 6.55% to 9.12%) of adults were marginally food insecure, 10.2% (95% CI 8.83% to 11.8%) were moderately food insecure, and 2.72% (95% CI 2.07% to 3.58%) were severely food insecure. Unemployment and disability were associated with higher odds of any food insecurity and higher odds of increasing severity of food insecurity compared to households with work and without a disability, respectively (OR for unemployed versus employed: 4.17, 95% CI 1.36 to 12.8 for severe food insecurity versus all other levels; OR for disability versus none: 6.06, 95% CI 2.92 to 12.6 for severe food insecurity vs all other levels). After matching respondent characteristics in the FYS with respondents from the LIDNS, the probability of low-income adults being food insecure rose from 27% (95% CI 25% to 31%) in 2003–2005 to 45% (95% CI 42% to 50%) in 2016. The rise was significantly greater for adults with a disability compared to those without a disability.
Conclusion Household characteristics associated with food insecurity reflect groups most likely to be in deep poverty in the UK. Rising food bank use in the UK may reflect rising food insecurity among low-income adults over the past 14 years, particularly for people with a disability.