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RF31 EFFECT OF TOBACCO AND ALCOHOL CONSUMPTION ON POVERTY IN THE UK

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Background Tobacco and alcohol use are major risk factors for premature mortality, and treating illnesses associated with tobacco and alcohol consumption comes at a heavy financial cost. Tobacco and alcohol use also place a financial burden on household budgets. There is limited research, however, that explores the effect of tobacco and alcohol consumption on poverty, particularly in high-income countries. Our study aimed to investigate the financial impact of tobacco and alcohol consumption in low-income households in the UK.

Methods We used data from the Living Costs and Food Survey (LCF), an annual cross-sectional survey which collects information on the cost of living and spending patterns of households in the UK. We used data on weekly household income and expenditure on tobacco and alcohol from the 2016–17 LCF to determine the proportion of households spending on tobacco and alcohol and the proportion of poor households in the UK spending on these products. We defined households as living in poverty if their equivalised (i.e. adjusted to account for household size) net disposable household income before housing costs (BHC) fell below 60% of the median equivalised net household income (relative poverty). We also combined the LCF data with national population estimates to calculate the number of households, adults and children that would be classified as living in poverty if alcohol and tobacco expenditure were subtracted from household incomes.

Results The proportion of UK households spending on alcohol falls with decreasing affluence, from 83% of families in the highest income decile to 47% in the lowest decile. The proportion of households consuming tobacco increases with financial deprivation, from 8% to 24%. Of the approximately 5.1 million UK households that live in relative poverty, 26% of these households purchase tobacco and 14% purchase alcohol, spending a median of £12.50 and £9.55 per week respectively on these products. An additional 320,000 households comprising 590,000 adults and 175,000 children live on incomes below the poverty threshold after subtracting expenditure on alcohol; and 230,000 households, comprising 400,000 adults and 180,000 children, after subtracting spending on tobacco from household incomes.

Conclusion Tobacco and alcohol consumption place an additional financial burden on low-income households, which is likely to exacerbate the adverse effects of poverty. This type of study is associated with ethical as well as practical challenges, and further research is needed to understand the substantial burden of smoking on poor households and the implications for policymakers.

RF32 THE ASSOCIATION BETWEEN GESTATIONAL WEIGHT GAIN AND BIRTHWEIGHT IS PARTLY SELF-FULFILLING AND SHOULD BE INTERPRETED WITH CAUTION

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Background The practice of routinely weighing pregnant women to monitor their 'weight gain' is controversial. In the United States, the National Academy of Medicine (NAM) advises regular weighing and recommends 'optimum' gain targets according to pre-pregnancy body mass index (BMI). In the United Kingdom, the National Institute for Health and Care Excellence (NICE) advises against routinely checking women's weight as pregnancy progresses.

This quite radical difference hinges on the believed causal effect of 'gestational weight gain' (GWG) on adverse pregnancy outcomes, such as macrosomia (birthweight≥4 kg). However, estimating this is very difficult because some association is expected between GWG and birthweight, by definition, because the *total* maternal weight 'gain' implicitly includes the offspring's weight. This study sought to highlight this problem and explore the size of this 'tautological association' in simulated data.

Methods Data were simulated using DAGitty R 0.2–2 to reflect three causal scenarios: 1) Birthweight caused by maternal height alone, 2) Birthweight caused by maternal height and maternal pre-pregnancy weight 3) Birthweight caused by maternal height, maternal pre-pregnancy weight, and maternal net end-of-pregnancy weight (i.e. 'gain').

GWG was constructed from [maternal net end-of-pregnancy weight + birthweight]-[maternal pre-pregnancy weight]. The odds ratios (ORs) for macrosomia by GWG were estimated by logistic regression, with and without conditioning on maternal pre-pregnancy BMI, constructed from [maternal pre-pregnancy weight]/[maternal height]^2. Simulation parameters were informed by full and partial correlations observed in the Danish National Birth Cohort.

Results Large associations were observed between GWG and macrosomia in all three scenarios, even though weight 'gain' only caused birthweight in the third scenario. The crude OR (95% credible interval) of macrosomia for GWG 'above' NAM guidelines compared with 'recommended' GWG were 1.26 (1.17–1.36), 1.34 (1.24–1.45) and 1.52 (1.41–1.65) respectively for scenarios 1 (birthweight caused by height only), 2 (height and pre-pregnancy weight), and 3 (height, pre-pregnancy weight, and end-of-pregnancy weight). Adjustment for pre-pregnancy BMI only modestly changed these associations, with ORs of 1.27 (1.18–1.37), 1.28 (1.19–1.39), and 1.42 (1.32–1.54) respectively.