OP58 APPLYING BIAS-ROBUST MENDELIAN RANDOMISATION ESTIMATORS TO NON-GENETIC INSTRUMENTAL VARIABLES: PROOF-OF-PRINCIPLE STUDY OF INCOME EFFECTS ON HEALTH

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Background Instrumental variable (IV) analysis uses proxy variables for an exposure to provide potentially unconfounded causal effect estimates, but can be biased when IV assumptions are not met. Determining when instruments are invalid is challenging. Robust IV estimators have been developed for Mendelian randomisation (MR) (using genetic IVs) providing consistent, unbiased estimates even if a proportion of instruments are invalid. We investigate how these estimators can be used in a non-genetic context.

Methods We used year-on-year changes in generosity of multiple welfare benefits to instrument for income's effect on mental health (GHQ-12 score) and life satisfaction. Individual fixed-effects IV analyses were conducted for each instrument, and resulting IV effect estimates were analysed using meta-analysis methods from the MR field (inverse variance weighted, MR-Egger, median, and mode-based estimators). The approach was demonstrated using a simulated dataset (20 instruments affecting 10,000 individuals over 5 time points) under scenarios with 25%, 50%, 75%, and 100% valid instruments, with and without correlation between instrument strength and direct effects. We then applied the methods to UK Household Longitudinal Study (UKHLS) data covering 2010 to 2020, using predicted benefit eligibility from a static tax-benefit microsimulation (UKMOD).

Results Simulations demonstrated that robust IV estimators can reduce bias when non-genetic instruments violate IV assumptions by directly affecting the outcome. The weighted median and mode estimators remained unbiased with up to 50% invalid instruments, while MR-Egger was unbiased but imprecise when direct effects were uncorrelated with instrument strength. In UKHLS data (n=59,249 individuals, 290,264 observations), six benefits were strong enough (F-statistic > 10) to include as instruments for social benefit income. The inverse variance weighted estimator suggested small effects of £100 monthly benefit income on GHQ-12 score (0.023 SD [95% CI: -0.003, 0.050]) and life satisfaction (0.009 SD [-0.018, 0.037]) in the same year; larger than the conventional fixed effects estimates of 0.000 SD (-0.002, 0.003) and -0.001 SD (-0.003, 0.002), respectively. Estimates were largely consistent across the bias-robust estimators, and robust to leave-one-out analyses, except for life satisfaction effects being primarily driven by Working Tax Credit. Results from MR-Egger were very imprecise.

Conclusion Robust IV estimators previously applied in MR are feasible to use for non-genetic IVs and may be useful when multiple instruments are available. These methods may help alleviate important limitations of IV methods and expand their use in public health research. The greatest limitation is the need for a sufficient number of distinct, strong IVs.

OP59 WEIGHT MANAGEMENT CONVERSATIONS BETWEEN PROVIDERS AND ADULTS WITH SEVERE MENTAL ILLNESS LIVING IN NORTHEAST ENGLAND: A QUALITATIVE STUDY OF SERVICE USERS' EXPERIENCES

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Background Weight management is a critical but often overlooked aspect of care for individuals with severe mental illness (SMI), particularly due to medication-related weight gain. Healthcare professionals often use opportunistic weight management conversations, aligned with the Making Every Contact Count (MECC) approach, to provide motivational support to service users. While research supports this practice from the professionals' perspective, the views of service users on these interactions remain understudied. The aim of this study was to explore the experiences of service users with SMI regarding weight management conversations with healthcare professionals.

Methods The research was conducted in Northeast England within a healthcare organisation managing multiple mental health services. Purposive sampling recruited 13 service users (9 inpatients, 4 community-based) with SMI, ensuring appropriate representation of age and gender. Inclusion criteria were adults aged 18+ who were current or former service users. Semi-structured, 1–1 interviews were conducted to explore experiences of weight management support. Interviews were audio-recorded with consent and transcribed verbatim. Data were analysed using Braun & Clarke's six-phase thematic analysis, with codes and themes developed iteratively and reviewed for consistency by a second researcher.

Results Five overarching themes emerged from the analysis, which align with the study's aim of exploring service users' experiences of weight management conversations and their relationships with healthcare professionals. These themes cover service users' perspectives on: (1) their experiences of weight management conversations, (2) the development of therapeutic relationships in hospital settings and how these shifted after discharge for community service users, (3) the support they received from healthcare professionals, (4) their preferences for healthcare professional communication, and (5) their descriptions of MECC conversations. Service users reported a lack of information regarding medication-related weight gain, emphasised the importance of strong therapeutic relationships in encouraging engagement with weight management discussions, and highlighted the value of timely, tailored advice.

Conclusion This study provides novel insights into service users' perspectives on weight management conversations within mental health care. It highlights factors that encourage service

user engagement, such as the importance of healthcare professionals' conversation skills, motivation, and the need for tailored advice. While the MECC approach has proven useful for offering brief advice, service users emphasised that these conversations must occur at appropriate times to maximize engagement. The study also proposes strategies to inform policy and practice for better integrating physical health support in mental health settings, offering specific implementation priorities to improve weight-related discussions.

OP60 SUPPORTING YOUNG BRADFORD: EXPLORING FAMILIAL EMOTIONAL SUPPORT FOR YOUNG PEOPLE GROWING UP IN BRADFORD

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Background There is good evidence that confirms the importance of familial emotional support in adolescence on health across the life course and may protect from other disadvantages experienced during adolescence. This mixed methods study explores these enablers and barriers for families providing emotional support within Bradford, a young, multi-ethnic urban area with high deprivation.

Methods Nine appreciative inquiry community workshops with parents and young people across Bradford; 39 in-depth interviews with parents and young people aged 12–16 (20 families) in the Born in Bradford (BiB) cohort and a cross-sectional analysis of the BiB Age of Wonder survey, completed by 3495 people aged 12–15 in 2022/23. Workshops used a participatory Ketso kit to gather responses. Interview transcripts were analysed thematically. We used ordinal logistic regression to test for association between emotional support (ES) and participant characteristics in cross-sectional survey data. Integration of the analysis from all data points occurred over a number of meetings between the research team and an external steering group.

Results Young people were facing a range of adverse emotional experiences and needed parental support. Cross-sectional analysis showed 54% of girls and 72.6% of boys reported high levels of ES (ordinal logistic regression boys were less likely to report lower ES compared to girls [OR 0.43, 95% CI 0.37–0.50]). In the year groups there was a trend for worsening emotional support in each year as children age. The workshops and interviews found that parental availability was a key enabler of emotional support. A key barrier to parental availability was their working patterns, including shift work, inflexible hours, multiple jobs and working away from the home. Better parental support was enabled by family activities such as daily mealtimes, days out and holidays but also passive, unstructured time as well as living nearby to (or sometimes with) extended family.

Conclusion If parents are less available their relationships with their children can be more distant and less supportive. This risks the creation of further inequalities for young people growing up in low-income households, where availability is more keenly tied to financial insecurity. The workshops and interviews work found mitigations to this, including the support of nearby family members and making the most of passive time together. Governments and employers need to recognise the continued importance of flexible working for parents as their children reach adolescence, as well as other contributors to job quality such as pay and working hours.

OP61 INCORPORATING PUBLIC INVOLVEMENT IN PUBLIC HEALTH RESEARCH: A CO-DESIGNED QUALITATIVE EVALUATION OF SPECTRUM CONSORTIUM PUBLIC INVOLVEMENT PANELS

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Background Over the past decade there has been a growing appreciation of the value public and patient involvement (PPI) can have within public health research, yet understanding of its benefits can still be overlooked. The SPECTRUM consortium (funded by the UK Prevention Research Partnership) is a multi-university, multi-agency research consortium focusing on the commercial determinants of health and health inequalities. SPECTRUM has three PPI groups who are regularly consulted for research projects related to alcohol, tobacco, vaping and food. This project evaluated the impact of the three groups and generated learning points for future PPI in prevention research.

Methods Interviews were conducted with PPI group members (n=23), facilitators (n=5) and researchers who had worked with one or more of the groups (n=6). Transcripts were coded using NVivo with additional analysis carried out by PPI group members.

Results Opinions about working with the groups and being part of a group were generally positive, PPI members enjoyed finding out about research and felt empowered by being consulted and helping to shape research. Researchers were mostly able to identify where there had been positive impact to their research after consulting the groups, they found the perspective of lived experience and a lay perspective enriched the research and made it more relevant. Potential improvements were identified by group members, such as more frequent communication about projects that they had been consulted on. Group members were concerned that they might no longer be representative of a lay voice given their accumulated experience and topic-area knowledge. Most researchers felt that this experience was a benefit as they did not have to spend time explaining the context of their research. Researchers and facilitators discussed issues around support and funding available for PPI, and inconsistencies in how it is valued.

Conclusion Consulting people with lived experience adds another dimension to public health research making more applicable to those who will ultimately benefit from it. Researchers and facilitators need to ensure that group members are informed of how their input has impacted the research and updated on projects as they progress. More work is needed to ensure PPI is valued consistently within