FLOODING AND WEATHER-DAMAGED HOMES: AN ANALYSIS USING ENGLAND'S MENTAL HEALTH SURVEY

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Background Climate change is increasing population exposure to weather-related hazards, such as extreme precipitation, storms, and flooding. There's growing concern that such exposure affects people's mental health. However, little evidence exists based on probability samples or using robust assessment of mental disorders.

Methods We analysed the Adult Psychiatric Morbidity Survey, a representative study of adults in England (n=7525). The most recent in the series asked about damage to the home (wind, rain, snow, flood) in the six months prior to interview. We investigated a) the social profile of those who experienced storm- and flood-damage, and b) whether experience of recent damage was independently associated with common mental disorder (CMD) after adjustment for other factors.

Results One person in twenty reported living in a storm or flood-damaged home in the previous six months (n=354). Social advantage (home ownership, higher household income) increased the odds of exposure. People whose homes had been damaged were more likely to have CMD (23.1%, 95% CI 18.5–28.4) than the rest of the population (16.7%, 95% CI:15.7–17.8, p=0.005). The strength of this association was similar to that of living in the most disadvantage Index of Multiple Deprivation quintile. Exposure was associated with CMD even when the damage had not forced them to leave the property. In adjusted regression analyses, recent exposure to living a storm or flood damaged home increased the odds of CMD by 50% (adjusted OR 1.5, 95% CI 1.08; 2.07, p=0.014).

Conclusion Even relatively slight storm and flood damage to people's homes is linked with higher rates of CMD. With climate change increasing the frequency and severity of storms and flooding, improving community resilience and disaster preparedness must be a priority. Understanding the mental health context of exposed populations is key to building this capacity.

HOUSEHOLD AIR POLLUTION AND ANAEMIA IN WOMEN AND CHILDREN: A CROSS-SECTIONAL STUDY OF SIX SUB-SAHARAN AFRICA COUNTRIES

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Background Globally, anaemia affects 0.5 billion reproductive-aged women and 42% of children under 5-year-olds. Over three billion people use polluting fuel daily mostly in low and low-middle-income countries. Most of these countries have severe public health significance of anaemia. Previous studies examined grouped effect of household fuel and health outcomes. We examined the associated risk of anaemia in women and children in Sub-Saharan Africa from exposure to individual cooking fuel types.

Methods This study explored the most recent data from Demographic and Health Survey (2013–2018) program. It involves nationally representative samples of women, children and household data in Ghana, Malawi, Rwanda, Tanzania, Uganda, and Zimbabwe. Anaemia, the outcome variable in women of reproductive age (15–49 years) and children aged 6–59 months, was ascertained from haemoglobin testing results carried out by trained field staff. The exposure variable was fuel used primarily in the households asked from the questionnaire. Descriptive analysis and multivariate Poisson regression analyses were done to estimate the risk of anaemia in both sample populations from exposure to cooking fuels after adjusting for several social determinants of health variables.

Results Overall, 93% of the total sampled population (55,742) were exposed to polluting cooking fuel, with 35% and 54% anaemia prevalence in women and children, respectively. In women, higher risk of anaemia was associated with exposure to liquid-petroleum-gas, adjusted risk ratios 1.29 [95% CI 1.03–1.63], p=0.03; charcoal 1.23 [1.05–1.44], p=0.01. Higher risk in children includes LPG 1.19 [1.01–1.41] p=0.04; coal/lignite 1.21 [1.11–1.36] p<0.00; and natural-gas 1.73 [1.18–2.53], p=0.01. The highest risk of anaemia (89%) was found in children aged 6–11 months.

Conclusion The study adds to the body of evidence of the risk to health of women and children from the specific fuel used for cooking. It is urgent for policymakers to prioritise funding for clean, affordable, equitable fuel in these low-middle-income countries and for implementation research to establish the best suited for each community based on resources available to them. The increase in global migration calls for healthcare professionals to enhance socio-demographic history taking to include detailed information about fuel use for the accurate diagnosis of anaemia.

PILOTING A GROUP-BASED MODELLING APPROACH TO EXPLORE LOCAL FOOD SYSTEMS WITH AN AGENT-BASED MODEL

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Background Daily dietary choices can be influenced by a host of behavioural factors (e.g., personal preferences, mental health state), as well as the social and policy environment (affordability, acceptability, and availability). Prioritising food environment policy changes to address dietary quality is thus challenging, and not well suited to some traditional research approaches.

Complex systems science is increasingly gaining ground in public health research and can be leveraged to better understand the determinants of poor dietary intake. Key methods include conceptual model building and computational modelling techniques. A co-production process called group model building (GMB) aims to bridge local issues and policy options. Traditionally, GMB has been used alongside system dynamics but not in agent-based modelling (ABM).

We, therefore, pilot a group modelling approach to inform development of a conceptual model of the local food environment in the Liverpool City Region to inform an ABM.

Methods We adapted and piloted a series of GMB stakeholder engagement activities (called scripts) for use in the ABM conceptual model with academics and partners from the local authority. We also developed a series of use-cases – policy