P42 **LIFECOURSE CONSEQUENCES OF PARENT TRAINING: MICROSIMULATION MODELLING OF AN ENGLISH BIRTH COHORT**

I Skarda*, M Asaria, R Cookson. *Centre for Health Economics, University of York, York, UK*

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Background Many public policies have potentially important but poorly understood long-run consequences for health, income, public cost and inequality over the lifecourse. We aim to improve understanding by (i) developing a novel discrete time lifecourse microsimulation model of an English birth cohort, and (ii) using it to extrapolate the lifecourse consequences of a training programme ('Incredible Years') for parents of young children exhibiting antisocial behaviour.

Methods Model: We simulate a cohort of 100,000 English children born in 2000–1, using data from the Millennium Cohort Study (MCS) to describe their characteristics and family circumstances. We model the year-by-year evolution of lifecourse outcomes using difference equations parameterised using quasi-experimental evidence and calibrated against longitudinal survey data. Difference equations vary across four key life stages (0–4, 5–24, 25–69 and 70+) to represent the causal pathways linking family circumstances, cognitive and socio-behavioural skills formation, conduct disorder and educational attainment in childhood to diverse later life outcomes including poverty, imprisonment, social security benefits, residential care, unhealthy behaviour, physical illness, mental illness and mortality.

Intervention: We assume training is offered to parents of all children at high-risk of conduct disorder at age 5. Effects on the parent-reported Strengths and Difficulties Questionnaire Conduct Subscale are drawn from a participant-level meta-analysis, with effect size differentiated by child gender, baseline behaviour problems and parental mental health.

Primary outcomes: We summarise lifetime benefits using 'good life-years' which go beyond conventional quality-adjusted life-years to adjust for income as well as illness. We examine differential benefits by parental income, mental health and baseline behavioural problems.

Results We estimate that parent training increases the lifetime wellbeing of a child at risk of conduct disorder by an average of 2.43 [95% CI 1.03 to 3.83] good years. On average, children with parents suffering mental health problems gain 8.04 [95% CI 6.75 to 9.34] good years; children with severe baseline behavioural problems gain 5.37 [95% CI 3.97 to 6.77] good years; children that are poorest 20% at birth gain on average 3.58 [95% CI 2.63 to 4.54] years and children that are richest 20% at birth gain on average 1.73 [95% CI 0.77 to 2.69] years. **Conclusion** Parent training can yield substantial long-run benefits in years of good life gained, especially for children from disadvantaged families, though uncertainty remains about effectiveness for parents who do not seek help.

P43 **USING THE HELPMEDOIT! APP AND WEBSITE TO SET AND MONITOR WEIGHT LOSS GOALS AND MOBILISE SOCIAL SUPPORT: QUALITATIVE FINDINGS**

^{1,2}L Matthews*, ^{1,2}J Pugmire, ^{1,2}S Simpson, ^{1,2}L Moore. ¹MRC/CSO Social and Public Health Sciences Unit, Institute of Health and Wellbeing, University of Glasgow, Glasgow, UK; ²on behalf of the HelpMeDoIt! Trial Management Group

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Background HelpMeDoIt! is an app/website that harnesses social support for weight loss by enabling participants to nominate friends/family to help them with their weight loss goals. The intervention focused on goal setting, self-monitoring and social support, guided by elements of control theory, social cognitive theory, self-determination theory and social support theories. Objective: To explore the views and experiences of trial participants and their helpers and explore whether the intervention theory was supported.

Methods Qualitative interviews were conducted at 6 mth follow-up, via telephone, with intervention participants (n=22) and their helpers (n=9). The sample included individuals who had and had not engaged regularly with the app/website. Interviews were recorded, transcribed verbatim and analysed thematically.

Results Insights were gained on various aspects of the intervention, including: feasibility of using an app to set and monitor weight loss goals; the social support process; barriers to engagement; and suggested improvements for a future trial. Key findings indicated that participants and helpers engaged with the concept of the intervention but their participation was hindered to some extent by technical problems. Helpers often provided social support without using the app, e.g. face-to-face or by text. Findings supported several aspects of the intervention theory including: helpers providing instrumental, emotional and informational social support; increased knowledge and skills, sometimes via support from helpers e.g. cooking skills; increased action planning and problem solving via effective goal-setting; and increased motivation either via successful self-monitoring or goal accomplishment. Participant/helper insight provided several suggestions to enhance the intervention, including, providing a community of peer support.

Conclusion Participants were enthusiastic about having helpers to support them as well as using an app/website for lifestyle behaviour change. The technology needs to be free of technical issues to avoid unnecessary barriers to engagement. An effective weight loss intervention delivered via smartphone app/website has the potential for population-wide impact. Findings will be used to help inform a future full trial.

P44 **ABSTRACT WITHDRAWN**

P45 **CHILD NUTRIENT INTAKES FROM CURRENT NATIONAL DIETARY SURVEYS OF EUROPEAN POPULATIONS COMPARED TO WHO RECOMMENDATIONS**

¹HL Rippin*, ^{2,3}J Jewell, ^{2,3}JJ Breda, ¹JE Cade. ¹Nutritional Epidemiology Group, University of Leeds, Leeds, UK; ²Division of Noncommunicable Diseases and Promoting Health through the Life-Course, World Health Organization Regional Office for Europe, Copenhagen, Denmark; ³World Health Organisation Regional Office for Europe

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Background The World Health Organisation (WHO) encourages national diet survey (NDS) implementation to obtain relevant data to inform policies aimed at addressing the burden of malnutrition and childhood obesity, which remain pressing health issues. However, we have previously shown that European NDS provision is inconsistent, and the majority of gaps lie in Central & Eastern European countries (CEEC). This paper provides an up-to-date review on energy, macro and

selected micronutrient intakes in children across the WHO European Region (WER) using the latest available NDS intakes and WHO Recommended Nutrient Intakes (RNIs) to highlight vulnerable groups and areas of concern.

Methods NDS information was gathered primarily by internet searches and contacting survey authors and nutrition experts. WER countries were grouped into areas – Western, Northern and CEEC. Survey characteristics, reported energy, and nutrient intakes by gender and age group were taken from the latest NDS reports from post-2000 surveys. Population weighted means were calculated and presented by country, European area and WER-wide for both genders and age groups <10 y and ≥10 y. WHO RNIs were used to assess nutrient intake adequacy and highlight aspects of concern.

Results Child energy and nutrient intakes were only available from 21 NDS across a third (n=18) of WER countries. Energy and macronutrients, where boys and older children had higher intakes, were more widely reported than micronutrients. Trans fats, omega fats, added sugar and iodine were the least reported nutrients. Countries in all European areas had poor RNI attainment levels; most countries did not meet the carbohydrate, sugar, saturated fat or fibre RNIs in any age group. Older adolescents were more likely to meet RNIs based on absolute levels rather than %E. Micronutrient attainment was higher than macronutrients, but worst in girls and older children. Iron, vitamin D, folic acid and sodium intakes were of concern, particularly in girls and children aged ≥10 y. Only six surveys reported intakes by various socio-economic indicators.

Conclusion Only a third, mainly Western, WER countries provided published child nutrient intake data. Gaps in provision mean dietary inadequacies may go unidentified, preventing evidence-based policy formation. WHO RNI attainment was poor, particularly in girls and older children. Inconsistent age groups, dietary methodologies, nutrient composition databases and under-reporting hinder inter-country comparisons. Future efforts should encourage countries to conduct NDS in a standardised format by gender, age and socio-demographic variables. A European-wide policy focus to improve intakes, particularly in girls and children aged ≥10 y would be beneficial.

The authors are responsible for the views expressed in this publication and they do not necessarily represent the decisions or stated policy of WHO.

P46 HOW DOES ETHNIC ADJUSTMENT OF CHILDHOOD BMI CHANGE OBESITY PREVALENCE IN INNER LONDON BOROUGH WITH HIGH ETHNIC DIVERSITY: ANALYSIS USING NATIONAL CHILD MEASUREMENT PROGRAMME DATA FOR 2015–2017

¹N Firman*, ¹C Dezauteux, ²A Miller, ³S Twite, ⁴M Tyrie, ⁵MT Hudda, ⁵P Whincup, ¹J Robson, ¹K Boomla. ¹Centre for Primary Care and Public Health, Barts and The London School of Medicine and Dentistry, Queen Mary, University London, London, UK; ²Public Health Team, London Borough of City and Hackney, London, UK; ³Public Health Team, London Borough of Tower Hamlets, London, UK; ⁴Public Health Team, London Borough of Newham, London, UK; ⁵Population Health Research Institute, St George's, University of London, London, UK

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Background for ethnic adjustment of BMI are available but not currently used in the National Child Measurement

Programme (NCMP). We evaluated the effect of ethnic-specific BMI adjustments on the prevalence of obesity and severe obesity, using cut-offs to identify children potentially needing clinical intervention, in three inner London Boroughs with high obesity prevalence and ethnic diversity.

Methods We analysed de-personalised NCMP data for 21 126 (10,348 girls) five year-olds (5,463, 9065 and 6598 respectively in City & Hackney, Newham and Tower Hamlets) and 19 024 (9,361 girls) 11 year-olds (4,865, 8274 and 5,885) for the school years 2015–16 and 2016–17. We estimated, for each borough, the prevalence of obesity (BMI centile ≥98th) and severe obesity (defined as ≥120% of the 95th centile) based on unadjusted and ethnic-adjusted BMI using ethnic-specific BMI adjustments for South Asian and Black ethnicity children, developed by Hudda *et al.* These add ~1.1 kg/m² to, and deduct between 0.12 and 5.52 kg/m² from, the BMI of South Asian and Black ethnicity children respectively. We report the net change in numbers identified for possible clinical intervention over both school years and for both ages combined.

Results Proportions of five and eleven year-olds of South Asian ethnicity were highest in Tower Hamlets (58.5%; 67.4% respectively) and Newham (39.1%; 30.3%), and lowest in City & Hackney (9.7%; 6.4%). Equivalent proportions of children of Black ethnicity were highest in City & Hackney (29.6%; 22.0%) and Newham (16.5%; 13.6%), and lowest in Tower Hamlets (8.3%; 9.4%). Ethnic-specific BMI adjustments increased the respective prevalences of obesity and severe obesity in Tower Hamlets from 6.7% and 1.7% to 8.1% and 2.5% at age five, and from 11.2% and 6.9% to 11.9% and 8.6% at age 11, a net increase of 133 obese and 154 severely obese children. Equivalent prevalences in City & Hackney fell after ethnic adjustment, from 6.7% and 1.8% to 5.2% and 1.4% at age five, and from 10.7% and 8.8% to 9.4% and 7.7% at age 11, a net decrease of 145 obese and 74 severely obese children. Prevalence estimates before and after ethnic adjustment in Newham were broadly similar, resulting in three fewer obese and 28 more severely obese children.

Conclusion Adoption of ethnic-adjusted BMI in ethnically diverse areas alters local estimates of childhood obesity, avoids misclassification of children of South Asian and Black ethnicity, and is essential to support clinical service planning and commissioning. Ethnic-specific BMI adjustments for children of mixed ethnicity are needed.

P47 HIGH PREVALENCE OF OBESITY IN THE GAMBIA: EVIDENCE FROM A NATIONWIDE POPULATION-BASED CROSS SECTIONAL HEALTH EXAMINATION SURVEY

B Cham*, S Scholes, L Ng Fat, O Badjie, N Groce, JS Mindell. *Epidemiology and Public Health, University College London, London, UK*

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Background The prevalence of obesity has more than doubled in West Africa over the past 15 years. Obesity is increasing at a faster rate in developing countries compared with developed countries. Possible explanations include epidemiological and nutritional transition, increased consumption of processed foods, and urbanisation. A 1996 study revealed a double burden of over- and under-weight in The Gambia. We examined overweight and obesity prevalence and the associated risk factors in Gambian adults.