
Methods We analysed data from a multistage (census tracts, households, and residents) household survey (2008–2009) conducted in Belo Horizonte City by the Observatory for Urban Health. One adult in each household was selected to answer the questionnaire that was composed of six domains. Neighbourhood was defined as census tract. Scales to represent different dimensions of neighbourhood were created using individual responses. Internal consistency was evaluated by Cronbach’s $\alpha$ and three-level multilevel models were used to evaluate each scale.

Results 4048 survey respondents represented 149 census tracts. We assessed nine neighbourhood environment dimensions: Public Services (8 items), Aesthetic Quality (4 items), Walking Environment (7 items), Violence (6 items), Social Cohesion (6 items), Activities with Neighbours (11 items), Neighbourhood Physical Disorders (8 items), Neighbourhood Social Disorders (5 items) and Neighbourhood Problems (16 items). Cronbach’s $\alpha$ coefficient ranged from 0.53 to 0.83, intraneighbourhood correlation ranged from 0.53 to 0.83, and neighbourhood reliability was 0.40 to 0.53 and neighbourhood reliability was 0.76–0.99. Most scales were associated with individual and neighbourhood predictors.

Conclusion These findings illustrated the measurement properties of neighbourhood-level constructs can be measured reliably, confirming their use in multilevel analysis to assess the neighbourhood effects on health outcomes.

ASSOCIATIONS OF MATERNAL WEIGHT GAIN IN PREGNANCY WITH OFFSPRING COGNITION THROUGHOUT CHILDHOOD AND ADOLESCENCE
doi:10.1136/jech.2011.142976g.17

Methods Data from the ALSPAC, a UK prospective pregnancy cohort were used. GWG was expressed using 2009 IOM categories of GWG and estimates from random effect linear spline models (median number of measures per woman: 10 IQR: 8–11). Outcomes were school entry assessment score (SEA, age 4, N=5832), Wisc-III assessed IQ (age 8, N=5191) and GCSE results (age 15, N=7359).

Results Offspring of women who gained less than the 2009 IOM recommended GWG had a -0.075SD lower mean SEA score (95% CI -0.127 to -0.025) compared with women who gained as recommended, even when adjusting for potential confounders including maternal education. Greater prepregnancy weight was inversely associated with all cognition measures. For example, mean difference in IQ per 1 kg increase in pre-pregnancy weight was -0.004SD (95% CI -0.006, -0.002). GWG in early pregnancy (0–18 weeks) and mid-pregnancy (19–28 weeks) were positively associated with SEA and IQ but not with GCSE results. GWG in late pregnancy (29 weeks onwards) was positively associated with higher SEA scores (0.205SD, 0.716, 0.621) and GCSE results (OR=1.35, 1.26, 1.46), with the latter not fully mediated by the association with SEA.

Conclusions Findings support a positive association between GWG, particularly in late gestation, and offspring cognitive development, which has lasting effects on school attainment at age 16 years. However, this could still be due to residuals confounding.

PREVALENCE AND RISK FACTORS OF HEPATITIS C VIRUS INFECTION AMONG POLISH NURSES AND MIDWIVES
doi:10.1136/jech.2011.142976g.18

Methods The seroprevalence in staff members was 1.4% (95% CI 1.07–3.1%), whereas weight gain during pregnancy was inversely associated with offspring cognition throughout childhood and adolescence.