

## Assessing the impact of childhood socio-economic conditions on child mental health: Findings from the Wirral Child Health and Development Study

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**Background:** There is increasing recognition that the early-years of a child's life are critical periods in which social inequalities in mental health can develop. A systematic review has shown that a socio-economic gradient exists in child and adolescent (5-18 years) mental health outcomes, but few studies have assessed the early emergence of inequalities in child mental health. The aim of this study was to assess the impact of childhood SECs on child mental health outcomes in preschool children and to identify potentially modifiable early life factors.

**Methods:** Analysis of the Wirral Child Health and Development Study, a longitudinal study of the early origins of child mental health, following 1233 children from a wide range of socio-economic backgrounds on the Wirral, North West England. The mental health outcome measure was parent reported child externalising problems, as measured by the Child Behaviour Checklist at 4.5 years. Maternal education at 20-weeks gestation, a measure of SECs in pregnancy, was the main exposure. We assessed the association of SECs with child mental health outcomes (log CBCL T-score) in sequential linear models adjusting for pre- and post-natal risk factors (e.g. parental mental health and perinatal factors). Exponentiated coefficients and 95% confidence intervals are presented as geometric means, using R (version X).

**Results:** Children of mothers in the most educated quintile scored 11.0% (95% CI 3.5-18) lower for externalising problems compared to children of mothers in the least educated quintile, after adjusting for sex and ethnicity. Male sex, prenatal maternal depression at 20 weeks, and postnatal depression at 3.5 years were independently associated with an increased risk of child mental health problems. Adjusting for prenatal maternal depression attenuated the association of maternal education with child mental health to 9% (95%CI 1-16) comparing the most educated to the least). Further adjustment for perinatal factors and post-natal mental health did little to further attenuate the association of SECs with child mental health.

**Conclusion:** In a study of early child mental health we found that social disadvantage is associated with worse child mental health outcomes at age 5. This was partially explained by adjusting for maternal mental health during pregnancy, but not postnatal measures of maternal mental health. Policies supporting maternal mental health in pregnancy are important to address the early emergence of inequalities in child mental health. Parent-reported child mental health, and cohort attrition are limitations of this study.