

The association between mother's alcohol consumption during pregnancy and their child's educational attainment and risk of hospital admission by age 14

Bandyopadhyay, A^{1*}, Brophy, S², Moore, S³, Akbari, A⁴, Paranjothy, S⁵, and Lyons, R²¹Administrative Data Research Wales (ADRW), Swansea University Medical School²Swansea University Medical School³School of Dentistry, Crime and Security Research Institute, Cardiff University⁴Administrative Data Research Wales (ADRW), Health Data Research UK Wales and Northern Ireland, Swansea University⁵School of Dentistry, Cardiff University

Background

Heavy alcohol consumption by mothers during pregnancy is associated with developmental problems in their children. However, the impact of light to moderate consumption on the long-term health and educational attainment up to adolescence has not been established.

Main aim

To investigate the association between mother's alcohol use during pregnancy and health and educational attainment of their children up to age 14 years.

Methods

Millennium Cohort Study (MCS) children in Wales (1,838), with parental consent, were record-linked to emergency hospital admission data between birth and 14 years (1,795) and National Curriculum Key Stage-Three (KS3) (1,645) records within the Secure Anonymised Information Linkage (SAIL) Databank. Mother's self-reported alcohol use during pregnancy was classified into a) abstain; b) light (1 - 2 units per week/occasion, 1 unit = 8g ethanol); c) moderate (3 - 6 units per week/3-5 units per occasion) and d) heavy (> 6, dropped due to a paucity of data). Cox regression estimated the risk of emergency hospital admission and multivariate linear regression models estimated the difference in KS3 scores by exposure group.

Results

71% of mothers abstained, 24% were light drinkers and 5% moderate. Light drinking was associated with children's lower risk of emergency hospital admission (HR = 0.85, 95% CI 0.75

- 0.97) and better KS3 scores ($\beta = 0.14$, 95% CI 0.05 - 0.23) by age 14 years, when compared to abstaining mothers. Children of mothers who drank moderately had a comparable risk of emergency hospital admission (HR = 1.07, 95% CI 0.79 - 1.46) and a better KS3 score ($\beta = 0.30$, 95% CI 0.11 - 0.49), compared to abstaining mothers.

Conclusion

Consumption during pregnancy of 1-2 units of alcohol per week/occasion was neither associated with an increased risk of emergency hospital admission nor poor academic attainment in children up to 14 years of age.

*Corresponding Author:

Email Address: a.bandyopadhyay@swansea.ac.uk (A Bandyopadhyay)