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Estimating the population effect of maternal alcohol use disorders on the educational achievement of children

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Objectives

Previous research has identified that heavy maternal alcohol use impacts on a child's health and development including poor cognitive and educational outcomes. However, very few studies have used objective measures of heavy alcohol-use and standardised school-based measures. Further, the magnitude of the effect of heavy maternal alcohol use on the educational outcomes of children in Australia is unknown. The primary aim of the project was to examine the association between in-utero and childhood exposure to maternal alcohol use disorder, which provides a proxy for heavy alcohol use, and children's educational outcomes.

Approach

This Western Australian population cohort study made use of linked administrative data to compare the educational outcomes of a cohort of exposed children born between 1989 and 2007 whose mother had an alcohol related diagnosis recorded on health datasets, with children whose mother did not have a diagnosis. The exposed cohort of mothers was frequency matched on maternal age within Indigenous status, and year of child's birth with a comparison cohort of mothers without an alcohol-related diagnosis. Records were linked with education records up to 2011, which included the results of standardised state and national testing for children (ages 8-14), and school attendance data (ages 6-18). Mixed multivariate models were used to examine the relationship between exposure, and timing of exposure in relation to pregnancy, and the risk of failure to meet educational benchmarks for reading, writing, spelling, numeracy and school attendance. Separate analyses were run for Indigenous and non-Indigenous children.

Results

The linkage quality tools implemented have led to improved clerical review and quality assurance processes which in turn have increased the overall quality of the linkage spine. The 'targeted' method of clerical review provides easy identification of false positive records, particularly those with high confidence scores such as twins and husband/wife combinations. The review of groups at lower confidence levels has minimised the rate of false negative pairs however further refinement of tools is required to minimise the time spent on reviewing these groups. The clerical review software module has equipped staff with the necessary information to make informed and timely decisions when reviewing groups of records. Detailed documentation is maintained for each linkage project providing continual feedback for system and process improvements as the linkage spine increases in size.

Conclusion

This project provides a unique view of how maternal alcohol use disorders affect a child's educational outcomes. The use of linked administrative data overcomes the use of retrospective recall of past behaviour, and self-reports of drinking patterns which may be considered socially unacceptable. Results of this project indicate that children whose mothers have an alcohol use disorder are academically at risk. These results suggest that routine monitoring of maternal alcohol use, early identification of at-risk children and intervention at both the school and family level may assist vulnerable children to reach academic benchmarks.

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