

Adverse family life events during pregnancy and ADHD symptoms in five-year-old offspring

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Abstract

Background

Prenatal exposure to maternal adverse life events has been associated with offspring ADHD, but the role of familial confounding is unclear. We aimed to clarify if adverse life events during pregnancy are related to ADHD symptoms in offspring, taking shared familial factors into account.

Method

Data were collected on 34,751 children (including 6,427 siblings) participating in the population-based Norwegian Mother and Child Cohort Study. During pregnancy, mothers reported whether they had experienced specific life events. We assessed ADHD symptoms in five-year-old children with the Conners' Parent Rating Scale–Revised: short form. We modeled the associations between life events and mean ADHD scores with ordinary linear regression in the full cohort, and with fixed-effect linear regression in sibling comparisons to adjust for familial confounding.

Results

Children exposed to adverse life events had higher ADHD scores at age 5, with the strongest effect observed for financial problems (mean differences 0.10 [95% CI: 0.09, 0.11] in adjusted model), and the weakest for having lost someone close (0.02 [95% CI 0.01, 0.04] in adjusted model). Comparing exposure-discordant siblings resulted in attenuated estimates that were no longer statistically significant (e.g. mean difference for financial problems -0.03 [95% CI $-0.07, 0.02$]). ADHD scores increased if the mother had experienced the event as painful or difficult, and with the number of events, whereas sibling-comparison analyses resulted in estimates attenuated toward the null.

Conclusions

These results suggest that the association between adverse life events during pregnancy and offspring ADHD symptoms is largely explained by familial factors.