People exposed to alcohol prenatally experience significant challenges, which differ by sex

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In a recent analysis, researchers found sex differences in the health and neurodevelopmental outcomes of people exposed to alcohol before birth.

Male participants in the study, published in *Alcohol: Clinical and Experimental Research*, experienced greater neurodevelopmental impairment, while female participants had higher rates of endocrine problems.

The types of environmental adversity they experienced also differed by sex—female participants had higher rates of trauma and victimization, while male participants had higher rates of problems with school and the criminal justice system. The findings from the study can help service providers and policymakers tailor interventions for people with prenatal alcohol exposure.

Researchers examined more than 2,500 records of people with confirmed prenatal alcohol exposure collected in Canada's National Fetal Alcohol Spectrum Disorder (FASD) Database. Participants were aged 1 to 61 with a mean age of 15, and 58% were male. Male and female participants were equally likely to be diagnosed with FASD. Overall, male study participants had higher rates of neurodevelopmental impairment, including motor, memory, attention, executive function, and adaptive function challenges.

Male participants were more likely to have ADHD, conduct disorder, and oppositional defiant disorder, while female participants had higher rates of anxiety and depression. Similar patterns are seen in the general population, but the rates are much higher for people with prenatal alcohol exposure than those without.

The study's findings showed the significant adversity people with prenatal exposure to alcohol experience throughout their lives. Thirty percent of female and 20% of male study participants experienced physical and/or sexual abuse. In school, 18% of male students were expelled or suspended compared to 9% of female students. Male participants also had more difficulties than female participants with

criminal offending and incarceration. The authors suggest that these problems in school and the justice system may be related to challenges with adaptive and executive functioning and difficulties with disruptive behaviors.

Notably, the researchers found no differences by sex in clinical presentation or experiences among preschool-aged children in the study and suggest that gendered expectations and responses of institutions—schools, legal and health-related—with which people come into contact may play a role in the differences found at later ages.

The study highlights opportunities for targeted intervention to support success in school, prevention of legal involvement, recognition of subtler gendered presentations of FASD, and trauma-informed care for this population with complex needs and strengths. Future research on the interactions between sex and gender and other factors that influence the experiences of people with FASD, such as parenting, employment, cultural identity, and interpersonal relationships, can provide greater insight.

At least 4%–5% of the population is estimated to be affected by fetal alcohol spectrum disorder, a neurodevelopmental disability caused by exposure to alcohol in utero.

More information: Katherine Flannigan et al, Sex-related differences among individuals assessed for fetal alcohol spectrum disorder in Canada, *Alcohol: Clinical and Experimental Research* (2023). DOI: 10.1111/acer.15017

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