

World Health Organization International Study on the Prevalence of Fetal Alcohol Spectrum Disorder (FASD): Canadian Component

Background & Purpose

Fetal alcohol spectrum disorder (FASD) is the leading known preventable birth defect and cause of developmental delays in Canada. Because FASD is difficult to diagnose, there have been no rigorous population-based studies to determine its prevalence, which is the frequency with which FASD occurs in the population. The goal of this study, the first of its kind in Canada, was to determine the prevalence of FASD among elementary school children in the Greater Toronto Area (GTA) of Ontario, Canada.

Study Approach

The study was conducted using an approach developed under the guidance of the World Health Organization (WHO) and the National Institutes of Health (NIH) - National Institute on Alcohol Abuse and Alcoholism (NIAAA) in the United States. This study was part of the WHO International Collaborative Research Project on Child Development and Prenatal Risk Factors.

The approach is called active case ascertainment. It is an epidemiological surveillance strategy in which cases are actively sought for examination and diagnosis, along with retrospective collection of prenatal alcohol exposure information.

- All students 7-9 years of age in 40 elementary schools in the GTA were invited to participate. In phase 1, all participants with parental consent were pre-screened for growth deficits, facial features characteristic of FASD, and behaviour/learning difficulties, all of which are relevant for an FASD diagnosis. Those who met certain criteria proceeded to phase 2.
- In phase 2, a neurodevelopmental assessment, maternal interview, and behaviour observation/ratings by parents or guardians were undertaken. Based on phase 2 findings, 383 students' study records were discussed during the next stage of case conferences.
- A multidisciplinary team of FASD experts reviewed each case and agreed upon a suspected diagnosis, based on the 2005 Canadian guidelines, which have since been updated, on FASD diagnosis.

Study Population

- 2,555 students in the GTA, representing four out of the five regional municipalities.
- 173 mothers.

Key Findings

The prevalence of suspected FASD was estimated to be between 18.1 per 1,000 (1.8 per cent) and 29.3 per 1,000 (2.9 per cent, using a less conservative approach).

Mothers of students with suspected FASD did not differ significantly from mothers of typically developing control children in terms of age, ethnicity, marital or employment status, but they did have lower levels of education. All mothers of students with suspected FASD reported consuming alcohol before realizing they were pregnant. In addition:

- 74.6 per cent of all mothers consumed alcohol before realizing they were pregnant.
- Among mothers of students with suspected FASD, 10.5 per cent reported consuming alcohol after recognizing they were pregnant; in total, 6.4 per cent of all mothers interviewed reported doing so.

Significance & Implications

This study provides the first population-based estimate of the prevalence of suspected FASD, which ranges between 2 and 3 per cent, among elementary school students (aged 7 to 9 years) in the GTA of Ontario, Canada. Prior to this study, the crude estimate of FASD prevalence among the general population of Canada was thought to be approximately 1 per cent, based on outdated studies originating in the United States.

The results of the current study show that FASD is an important and preventable public health problem in Canada. There is a need to improve prevention initiatives targeting alcohol use during pregnancy; develop surveillance systems for FASD and prenatal alcohol exposure; and provide timely interventions and support to individuals with FASD and their families.

Research Team

Study authors: Svetlana Popova (CAMH), Shannon Lange (CAMH), Albert Chudley (University of Manitoba), James Reynolds (Queen's University), Jürgen Rehm (CAMH).

Collaborators: Philip A. May (University of North Carolina at Chapel Hill), Edward P. Riley (San Diego State University).

Funding Source

Public Health Agency of Canada