

Fetal Alcohol Syndrome: Understanding its impact

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This article is based on an extensive earlier review of the literature on Fetal Alcohol Syndrome from the perspective of the implications this condition might have for the criminal justice system and for the Correctional Service of Canada.³

Damage resulting from alcohol to the fetus has been observed since biblical times, yet not until 1973 was it formally recognized as Fetal Alcohol Syndrome (FAS).⁴ Diagnosis of FAS requires a positive history of maternal alcohol consumption during pregnancy, as well as three criteria including *prenatal and/or postnatal growth delay, characteristic cranio-facial anomalies, and central nervous system* impairments.

An accumulation of research has also indicated more subtle forms of FAS that have been termed Fetal Alcohol Effects (FAE)⁵ which often have two but not three of the formal features of FAS. In both FAS and FAE the damage to the brain is permanent and produces a number of primary and secondary disabilities as the child matures.⁶ At this point in time there are problems with diagnosing FAS/FAE in children, but with awareness on the part of health professionals and advances in knowledge and techniques, progress continues to be made. Aside from prevention, then, the goal of intervention would be to manage the behavioral consequences of FAS/FAE that emerge at different points in the lifespan such that the person's adaptive functioning is maximized.

In addition to alcohol consumption and patterns of drinking alcohol by mothers, it should be recognized that there are a number of other situational and social maternal risk factors that are related to FAS/FAE such as socioeconomic status, multiple drug use, and poor health.

Infants with FAS/FAE display, to varying degrees, primary disabilities such as irritability, jitteriness, tremors, weak suck, problems with sleeping and eating, failure to thrive, delayed development, poor motor control and poor habituation. In the preschool years, problems such as hyperactivity, attention problems, perceptual difficulties, language problems and poor motor coordination are common. Once a child with FAS/FAE reaches school age the primary disabilities are hyperactivity, attention deficits,

learning disabilities, arithmetic difficulties, cognitive deficits, language problems and poor impulse control.

In adolescence and adulthood the primary difficulties are memory impairments, problems with judgment and abstract reasoning and poor adaptive functioning. These difficulties get translated into secondary disabilities that include being easily victimized, unfocused and distractable, difficulty handling money, problems learning from experience, trouble understanding consequences and perceiving social cues, poor frustration tolerance, inappropriate sexual behaviors, substance abuse, mental health problems and a high incidence of trouble with the law.

Common risk factors, which may increase the number of secondary disabilities, include poor home environment, abuse and neglect, and familial upheaval. Common protective factors that may reduce the number of secondary disabilities are a stable and supportive home environment and not being a victim of violence.

There is a considerable association between FAS/FAE, attention deficit disorder with or without hyperactivity, conduct disorder and *delinquency* and *crime*. The predictors that appear to be common to both individuals with FAS/FAE and individuals who become delinquent are hyperactivity, impulsivity, attention deficit disorder, low intelligence, poor school achievement, antisocial behaviour and poor parental child-rearing.

We are only now learning about adults with FAS/FAE and know little about how to treat their multiple problems and nothing about their response to treatment efforts. We do know that many will come into contact with the criminal justice system and Canada's correctional services. A primary requirement is to identify these individuals in order that researchers can assist in the identification of their treatment needs, as well as contribute to the design and evaluation of correctional programs that will consider the particular cognitive and behavioral deficits of these individuals.

The present estimate of the world-wide incidence of FAS is approximately 1.0 cases per 1000.⁷ Similarly, the American incidence of FAS is estimated to be

between 1-2 cases per 1000.⁸ There is no national data for Canadian estimates of FAS, although tens of thousands of adults are estimated to have the full or partial syndrome.⁹ For women who have already had one child with FAS, their risk of reoccurrence is very high with an incidence estimate of 771 out of 1000.¹⁰

The first report in Canada estimating the incidence of FAS for an entire province was conducted in Saskatchewan and published in 1996.¹¹ All cases that were born in Saskatchewan prior to January 1st, 1993 were studied. In total, 207 cases of FAS were identified in this study with 86% of these cases being of Aboriginal descent. The authors additionally concluded that due to the likelihood of the number of cases being under-diagnosed throughout the province, that their incidence statistics were underestimated. Virtually all epidemiological studies have concluded that FAE have an incidence of 3 to 4 times higher than FAS.¹² However, because FAE are less likely to be consistently diagnosed or to be observed by a health care professional, they continue to be under detected.

An accumulation of research has indicated that the incidence of FAS differs across Canada and the United States with some areas having much higher rates than others. These differences seem to lie within different Aboriginal cultural groups whose incidence of FAS/FAE has been documented to be as much as ten times higher than general population estimates.¹³

FAS among Aboriginal populations in Canada is a major concern. Bray and Anderson's review of the epidemiology of FAS among Canadian Aboriginal peoples illustrates high incidence rates through several studies.¹⁴ Sandor's study of 76 patients (69 of which were Aboriginal ancestry) in the Yukon Territory and British Columbia indicated a 10.9 to 1 ratio of Aboriginals with FAS to Caucasians.¹⁵ A further study by Asante and Nelms-Matzke (1985), cited by Bray and Anderson, looked at 586 subjects in 36 Aboriginal communities in the Yukon Territory and British Columbia and found that the combined prevalence of FAS and FAE was 46 cases out of 1000 in the Yukon, and 25 cases out of 1000 in British Columbia. The prevalence rates for non-Aboriginals in this area were 0.4 cases per 1000. The highest prevalence of FAS/FAE was reported in a study of 116 Aboriginal people from a British Columbia reserve. The prevalence among Aboriginals in this village was 190 cases per 1000.¹⁶ In addition to these high rates of FAS (reported here), Burd and Moffat's review of FAS in North American Indians and Canadian Aboriginals also points to high prevalence and incidence rates in Alaska (2.7 per 1000 cases),

Northern British Columbia (10.3 per 1000 cases), North Dakota (3.1 cases per 1000) and South Dakota (3.9 per 1000 cases).¹⁷ These authors note that among the ten studies they reviewed (including those reviewed by Bray and Anderson, 1989), consistent FAS criteria were used to determine central nervous system (CNS) dysfunction, growth impairment, facial features and maternal alcohol consumption during pregnancy. They also point out that notwithstanding the high prevalence observed, this may still underestimate FAS in these populations as none of the ten studies examined all children in these populations who may have had FAS.

As North American Aboriginals constitute culturally diverse groups, it is difficult to classify them together even though many appear to have much higher rates of FAS/FAE than found anywhere else. For example, within Aboriginal subcultures there are substantial differences among cultural tribes in social, geographical and economic circumstances and in cultural attitudes toward drinking. The research suggests that risk of FAS would be better correlated with drinking styles of each cultural group than overall alcohol consumption levels.

The research suggests that Aboriginal subcultures also tend to have young populations where child bearing begins earlier and ends later. Furthermore, in addition to cultural attitudes to alcohol, styles of drinking, and longer child bearing span, Aboriginal communities often lack rehabilitation programs for women, which may compound high rates of FAS. A lack of knowledge of FAS among Aboriginal peoples may be another contributing risk factor.

Researchers interviewed 123 Canadian Aboriginal women in Victoria and Vancouver and observed that virtually all (96%) were aware of the danger of drinking alcohol during pregnancy, that most women (85%) believed that there was no safe amount of drinking during pregnancy, and that 40% of women knew someone with FAS.¹⁸ However, though the majority had heard of FAS, gaps existed in their knowledge of its causation, characteristics, and implications.

There is much to learn about which factors are specifically responsible for placing Aboriginal women at risk for producing FAS/FAE children. The lack of published research in Canada on the incidence of FAS/FAE in both Aboriginal and non-Aboriginal populations make it difficult to compare these groups or to draw confident conclusions. Also, comparisons are further complicated because non-Aboriginal studies have been conducted in clinical and urban settings, whereas Aboriginals have been studied in small communities and reservations.

Despite these inconsistencies between studies, there does appear to be greater problems of FAS/FAE for certain Aboriginal populations.

As we learn more about adolescents and young adults with FAS/FAE, it is clear that without effective early intervention, they experience a high incidence of trouble with the law. Given that Aboriginal offenders are considerably over-represented in the federal justice system, the question arises as to whether one of the contributing factors is the high rate of FAS/FAE experienced by our Aboriginal population.

Fetal Alcohol Syndrome is a complex and multi-determined problem that presents a number of challenges to researchers, to medical professionals, and to society as a whole. Although many questions pertaining to FAS and FAE are being answered through the continuous accumulation of research that is taking place both in North America and in Europe, there remain substantial gaps in current knowledge of FAS and related issues. Future efforts must attempt to establish more objective and reliable diagnostic measures and assessment techniques for FAS and particularly for FAE. Additional research is also needed to address the current inadequate knowledge of the prevalence and incidence rates of FAS and FAE in Canada. Another priority for researchers and clinicians should be to investigate patterns in alcohol consumption and drinking styles of Canadian Aboriginal women of childbearing age.

These challenges are not easy ones to overcome, but it is crucial to seriously confront these issues if there is to be advancement in attaining a more complete, comprehensive and accurate understanding of FAS/FAE. Such an understanding is critical to formulate prevention and intervention efforts.

Given the available statistics and the overview presented in this paper, particularly with respect to Aboriginal populations, early intervention is called for as a preventative measure. The consequences of FAS/FAE and its impact on the criminal justice system require an investment of research and operational resources to ensure that those individuals who come in contact with correctional services or other social service agencies receive the help they require to maximize their chances of living a healthy, stable and crime free-lifestyle.

With this in mind, a multi-year workplan has been developed with four main goals. Firstly, to facilitate interagency co-operation in order to take advantage of existing liaisons and resources for FAS research and service delivery. Secondly, to conduct research in the development and validation of screening and assessment instruments for adult offenders with FAS/FAE. Thirdly, to investigate prevalence rates of FAS/FAE in correctional samples. Finally, to consider the adaptation or development of new programs to be responsive to the needs of these offenders. ■

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¹⁷ L.S. Burd and M.E. Moffat, *Epidemiology of Fetal Alcohol Syndrome in American Indians, Alaskan Natives, and Canadian Aboriginal peoples: A review of the literature*. *Public Health Reports*, 109, (1994): 688-693.

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