

FETAL ALCOHOL SYNDROME IN THE CANADIAN CORRECTIONS SYSTEM

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ABSTRACT

Background

The availability of services for diagnosis and management of people with Fetal Alcohol Syndrome (FAS), Alcohol Related Neurodevelopmental Disorder (ARND), or Fetal Alcohol Effect (FAE) in the Canadian corrections system is currently unknown.

Methods

Each province's or territory's corrections system was asked to complete a questionnaire on the demographics of the population and services related to FAS. Responses were obtained from eleven of the thirteen provinces or territories invited to participate.

Results

The provinces and territories reported a total population of offenders of 148,797. In the eleven responding entities, the mean rate of substance abuse was 50.5%. Of the total population, 13 inmates had a reported diagnosis of FAS for a prevalence rate of 0.087 per 1,000 population. In the Yukon Territory the correction system estimated that 2.6% of offenders had FAS. None of the entities reported having a screening program for FAS in the corrections system. Three out of eleven entities (27.3%) reported having access to diagnostic services for FAS. The staff training needs reported in this study were very substantial.

Interpretation

Corrections systems reported few diagnosed cases of FAS and multiple unmet needs to screen, identify, and manage offenders with FAS. Further research is required to identify strategies for low cost expansion of services to screen, identify, and manage offenders with FAS. These studies should also examine the potential impact of these services to increase the success rates of substance abuse treatment, other intervention programs, and the potential to decrease recidivism.

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INTRODUCTION

Drinking during pregnancy has a wide range of consequences.¹⁻³ Most exposed pregnancies have low exposure levels and only brief periods of exposure. In pregnancies with prolonged high levels of exposure, consequences can be severe and may result in Fetal Alcohol Syndrome (FAS). The syndrome is highly variable and can result in different combinations of neurobehavioral deficits.^{3,4}

The behavioral problems in FAS may change in their expression as affected people age but the impairments do extend into adolescence and adult life.⁴ Streissguth uses the term secondary disabilities to describe potentially

preventable problems that occur in persons with FAS that occur after the affected child is born.⁴ The adverse outcomes from prenatal alcohol exposure represent a spectrum of biophysical impairments and are likely to be partially preventable with appropriate intervention.

People with FAS have a variety of neurobehavioral disorders including mental retardation, attention deficit - hyperactivity disorder (ADHD), learning disabilities, and behavior disorders.³⁻⁶ The mortality rate for children diagnosed with FAS is about 6%.⁷ Table 1 presents the results of a prospective cohort study of adolescents and adults with FAS and FAE and demonstrate that prenatal alcohol

exposure is an important factor in increased rates of alcohol and drug addiction, learning disabilities, cognitive impairment, and behavior disorders.⁸ This study also demonstrated increased rates of contact with criminal justice systems.⁴

Table 1

Secondary Disabilities in 400 Adolescents and Adults with Fetal Alcohol Syndrome and Fetal Alcohol Effect⁴

1. Mental health problems: 90%
2. Disrupted school experience (suspended or expelled from school or dropping out of school): 60%
3. Trouble with the law: 60%
4. Confinement (includes inpatient treatment for mental health problems, alcohol/drug problems, or incarcerated for a crime): 50%
5. Inappropriate sexual behavior: 50%
6. Alcohol / drug problems: 30%

Protective Factors:

1. Living in a stable and nurturing home for over 72% of life.
 2. Being diagnosed before the age of 6 years.
 3. Never having experienced violence against oneself.
 4. Staying in each living situation for an average of more than 2.8 years.
 5. Experiencing a good quality home from age 8 to 12 years.
 6. Having applied for and been found eligible for Division of Developmental Disabilities services.
 7. Having a diagnosis of FAS.
 8. Having basic needs met for at least 13% of life.
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The most recent diagnostic schema for FAS from the Institute of Medicine (IOM) suggests multiple diagnostic categories.³ These categories include: FAS with confirmed maternal alcohol use during pregnancy, FAS without confirmed alcohol use during pregnancy (usually due to mother being dead or unavailable), partial FAS, Alcohol Related Neurodevelopmental Disorder (ARND) and Alcohol Related Birth Defects (ARBD).

Adequate prevalence data for FAS in corrections settings is not available. One prevalence study conducted in an atypical population of juveniles referred for assessment in a forensic assessment unit in British Columbia reported a prevalence rate of 23%.^{9,10} However, current prevalence estimates in community settings suggest a prevalence rate ranging from 0.33 per 1,000 live births (FAS only) to 9.1 cases per 1,000 population (FAS and Fetal Alcohol Effect).^{1,2,11} The term Fetal Alcohol Spectrum Disorder (FASD) has recently been widely utilized to encompass the full spectrum of damage from prenatal exposure. Unfortunately specific diagnostic criteria for FASD are not currently available. In this paper, we will use Fetal Alcohol Spectrum Disorders (FASD) to refer to the broad spectrum of disorders resulting from prenatal alcohol exposure and will utilize the terms FAS and FAE to refer to publish diagnostic criteria or prevalence rates.

In a previous study of FAS in the corrections system in the United States, we found very low rates of diagnosed cases and respondents reported the need for increased access to services and staff training on FAS¹². This study was developed to examine the status of the Canadian corrections system's awareness of FAS, current screening strategies for FAS, availability of diagnostic resources, treatment resources, staff training needs on FAS and to provide a preliminary estimate of numbers of affected people in the corrections system of Canada.

METHODS

We utilized the methodology described in our previous study in the US which will be briefly reviewed here.¹² The study was approved by the Institutional Review Board from the University of North Dakota. The Director of Corrections for each province or territory in Canada was sent a letter and a questionnaire.

The questionnaire (attached as Appendix 1) included 39 items examining a wide range of issues related to FAS including information on the total number of persons enrolled in their systems, use of screening methods for FAS or ARND, availability of diagnostic resources, staff awareness, and number of diagnosed cases. Intense follow-up by phone, e-mail, and mail over a period of seven months resulted in responses from all entities other than Alberta and British Columbia who declined to participate. For Alberta and British Columbia the population data was obtained by telephone from their office, however, they did not complete the remainder of the questionnaire.

RESULTS

Responses were obtained from 85% of the provinces or territories in the study sample. The results were obtained from the Director of Corrections for each respondent. In Table 2, demographic information by respondent is listed at the time of completion of the questionnaire (October 2001 through April 2002). The combined population estimates including both federal and provincial prison populations were 148,797 (128,425 provincial and 20,372 federal). Of this population, 135,772 were male (91.2%) and 13,025 were female (8.8%).

Reported rates of substance abuse were very high (50.5%). The total population with substance abuse problems was 75,142 (Table 3). The population of women with substance abuse problems is estimated to be 6,513 (13,025 x 50.5%). Many of these women are in the 15-45 year old age group and would be high risk to have affected children in the future. Thirty-seven women were pregnant at the time of this study.

Specialized programs for pregnant women with substance abuse problems were reported by two (15.4%) corrections systems (NS<PE) and three (23.1%) community corrections systems (NS, ON, PE). Specialized programs for persons with mental retardation in the prison system were reported by one corrections system (MB) 7.7% of the respondents. Five systems (MB, NB, NS, NU, ON) (38.5%) provided specialized programs for persons with mental retardation in their community corrections systems. This is an important service since many women with FAS would have mental retardation, learning and behavior problems. They would likely require modification of substance abuse treatment, vocational programs and most other interventions for the programs to be successful.

In a population of 148,979 offenders, thirteen identified cases of FAS were reported in this survey. This is a prevalence rate of 0.087 per 1,000 offenders. Prevalence rates of FAS and FAE in the general population of Canada could range from 0.33 per 1,000 the mean estimate from Abel's review of published prevalence studies for FAS to 9.1 per 1,000 (a more recent population prevalence estimate of FAS and FAE in the United States, France, Germany) by Sampson et al.¹¹ In Table 4 we estimate the number of offenders with FAS and FAE in each corrections system utilizing population based estimates for the rates of FAS of 0.33 per 1,000 as a conservative estimate and 9.1 per 1,000 of FAS and FAE as a high estimate.⁴ Using the conservative estimate, there could be as few as 36 undiagnosed cases (49-13) of FAS to a high estimate of 404 undiagnosed cases of FAS (417-13), and 937 undiagnosed cases of FAE, or a total of 1,341 undiagnosed cases of both. This data demonstrates the magnitude of the task of identifying FAS and ARND in corrections systems. Identified cases in the corrections system reported in this survey demonstrate that one third of expected cases have been identified using the conservative rate for FAS from Abel of 0.33 per 1,000 or about 1% of expected cases using the prevalence estimates of 9.1 per 1,000 the prevalence of FAS and FAE from Sampson et al.⁴

Table 2
Population Data for the Provincial, Territorial and Federal Prison Systems by Gender

| Province/Territory* | Total N | n | Male (%) | n | Female (%) |
|---------------------|---------|---------|----------|--------|------------|
| Total | 148,797 | 135,772 | (91.2%) | 13,025 | (8.8%) |
| Federal | 20,372 | 19,565 | (96.0%) | 807 | (4.0%) |
| AB | 2,070 | 1,950 | (94.2%) | 120 | (5.8%) |
| BC | 13,166 | 10,867 | (82.5%) | 2,299 | (17.5%) |
| MB | 10,084 | 8,481 | (84.1%) | 1,603 | (15.9%) |
| NB | 3,062 | 2,597 | (84.8%) | 465 | (15.2%) |
| NF | 2,310 | 1,900 | (82.3%) | 410 | (17.7%) |
| NS | 4,379 | 4,273 | (97.6%) | 106 | (2.4%) |
| NT | 176 | 168 | (95.5%) | 8 | (4.5%) |
| NU | 94 | 94 | (100.0%) | | |
| ON | 62,623 | 59,058 | (94.3%) | 3,565 | (5.7%) |
| PE | 83 | 79 | (95.2%) | 4 | (4.8%) |
| QC | 23,841 | 21,238 | (89.1%) | 2,603 | (10.9%) |
| SK | 6,039 | 5,085 | (84.2%) | 954 | (15.8%) |
| YK | 498 | 417 | (83.7%) | 81 | (16.3%) |

Table 3
Reported Rates of Substance Abuse for Eight Provinces or Territories

| Province/ Territory* | Total Population | Substance Abuse (n) | Rates (%) |
|---------------------------|---------------------|------------------------|-----------|
| Total Population | 148,797 | | |
| Federal Population | 20,372 | | |
| AB | 2,070 | | |
| BC | 13,166 | | |
| MB | 10,084 | 7,619 | 75.6% |
| NB | 3,062 | 1,898 | 62.0% |
| NF | 2,310 | 1,417 | 61.3% |
| NS | 4,379 | | |
| NT | 176 | | |
| NU | 94 | 89 | 94.7% |
| ON | 62,623 | 28,684 | 45.8% |
| PE | 83 | | |
| QC | 23,841 | 11,921 | 50.0% |
| SK | 6,039 | 5,131 | 85.0% |
| YK | 498 | 424 | 85.1% |

*(AB) Alberta, (BC) British Columbia, (MB) Manitoba, (NB) New Brunswick, (NF) Newfoundland, (NS) Nova Scotia, (NT) Northwest Territories, (NU) Nunavut, (ON) Ontario, (PE) Prince Edward Island, (QC) Quebec, (SK) Saskatchewan, (YK) Yukon Territory

Table 4

Expected Rates of FAS and FAE in Canadian Corrections Systems' Populations

The ranges were calculated using the estimates from Abel as a conservative rate and the estimates from Sampson et al as a high rate ^{1,11}

| Entity | Abel ¹ | | Sampson et al. ¹¹ | | |
|----------------|-------------------|---------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | N | FAS only (0.33 per 1,000) | FAS only (2.8 per 1,000) Estimated N | FAE only (6.3 per 1,000) Estimated N | Combined (9.1 per 1,000) Estimated N |
| Total | 148,797 | 49 | 417 | 937 | 1354 |
| Federal | 20,372 | 7 | 57 | 128 | 185 |

Province or Territory

| | | | | | |
|-----------|--------|----|-----|-----|-----|
| AB | 2,070 | 1 | 6 | 13 | 19 |
| BC | 13,166 | 4 | 37 | 83 | 120 |
| MB | 10,084 | 3 | 28 | 64 | 92 |
| NB | 3,062 | 1 | 9 | 19 | 28 |
| NF | 2,310 | 1 | 7 | 15 | 21 |
| NS | 4,379 | 1 | 12 | 28 | 40 |
| NT | 176 | 0 | 1 | 1 | 2 |
| NU | 94 | 0 | 0 | 1 | 1 |
| ON | 62,623 | 21 | 175 | 395 | 570 |
| PE | 83 | 0 | 0 | 1 | 5 |
| QC | 23,841 | 8 | 67 | 150 | 217 |
| SK | 6,039 | 2 | 17 | 38 | 55 |
| YK | 498 | 0 | 1 | 3 | 5 |

*The data from Sampson, et al. with rates per 1,000 population of 2.8 for FAS estimated from 6.3 for ARND or FAE and total rates of 9.1 in community populations. This would be the expected rate if FAS was not increased in the corrections system. The diagnosed cases of FAS were subtracted from the total population prior to calculating the ARND estimates.

** (AB) Alberta, (BC) British Columbia, (MB) Manitoba, (NB) New Brunswick, (NF) Newfoundland, (NS) Nova Scotia, (NT) Northwest Territories, (NU) Nunavut, (ON) Ontario, (PE) Prince Edward Island, (QC) Quebec, (SK) Saskatchewan, (YK) Yukon Territory

Table 5
Preference for FAS Training Delivery Strategy in Canadian Corrections Systems

| Training Strategy | Preference | | | | | |
|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|
| | 1 st n (%) | 2 nd n (%) | 3 rd n (%) | 4 th n (%) | 5 th n (%) | Missing n (%) |
| Manual & Video | 4 (30.8) | 4 (30.8) | 1 (7.7) | 1 (7.7) | 1 (7.7) | 2 (15.4) |
| Train the Trainers Workshop | 6 (46.2) | 2 (15.4) | 3 (23.1) | 0 (0.0) | 0 (0.0) | 2 (15.4) |
| Provincial Conference | 1 (7.7) | 3 (23.1) | 1 (7.7) | 1 (7.7) | 2 (15.4) | 3 (23.1) |
| CD based Program | 0 (0.0) | 2 (15.4) | 4 (30.8) | 4 (30.8) | 2 (15.4) | 3 (23.1) |
| Regional Conference | 0 (0.0) | 0 (0.0) | 2 (15.4) | 2 (15.4) | 4 (30.8) | 3 (23.1) |

We requested information about staff training needs on FAS. One entity (NT) (7.7%) reported having adequate staff training on the identification and management. Four entities (NB, NU, SK, YK) (30.8%) had a corrections system director who had been trained in the past few years on FASD. However, 10 (76.9%) were willing to have training on FAS. Corrections systems in Canada have large staffs and to provide even basic information on FAS to the proportion of new employees will be a substantial endeavor. The preference of training strategies for corrections systems is summarized in Table 5.

DISCUSSION

This survey of FAS services in the corrections system suggests that the infrastructure capacity, staff awareness, access to screening, and diagnostic services are very low. The number of affected inmates currently identified in the

Canadian corrections system is well below expected rates.

Identification of FAS in the corrections system is important. The disorder represents a substantial barrier to learning and would impact the affected person's ability to master essential programs (i.e., substance abuse treatment, anger management, and vocational training). The impairments of FAS may be especially crucial issues in the generalization of these skills from prison to non-prison community based settings.

Nearly all corrections systems indicated a need for increased staff education about basic recognition and management of persons with FAS. Development of systematic screening programs for persons entering the corrections system would be helpful in identifying persons who are likely going to require specialized interventions during the course of their incarceration and follow-up. This would be especially true in the treatment of substance abuse problems for these persons. Several

suggestions appear to be indicated, based on the results of this survey. Corrections systems need to begin to systematically screen for FAS. While existing screening strategies could be modified for this effort it is likely that screening strategies for this population need to be developed and tested to determine their epidemiologic performance characteristics. Only three provinces or territories (23.1%) have access to diagnostic services in their community corrections systems. This may be a factor in the finding that of the 148,797 offenders in the Canadian corrections system, only thirteen offenders were reported to have a diagnosis of FAS by Canadian Corrections authorities.

Numerous opportunities and barriers are present in attempts to identify affected people in this system. For many offenders a past history of exposure may be difficult to document. However, this would not be a problem for all offenders. Diagnostic criteria for adults are not well established. However for the most typical or severe manifestations of the syndrome, the diagnosis would be possible. For many, additional information would be required. This may include past medical records and pictures during childhood with past and current psychoeducational testing. Completion of prevalence studies of FAS and ARND in the corrections system are essential. This would help clarify prevalence rates, particularly in the adult corrections system. Funding additional studies of the impact of FASD on effectiveness of substance abuse treatment, treatment of anger management, recidivism rates, and employment should also be priorities. Corrections systems need to develop basic awareness programs for their staff to recognize the basic characteristics of FASD to facilitate utilization of and basic management strategies for this population. FASD may be a highly prevalent developmental disability in the corrections system. Staff training needs in the corrections system are substantial. Substantial initiatives are required to offer even minimal diagnostic and intervention services for this population. These services may have an important impact in these populations.

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Appendix 1

Your State, Region, or Province _____

Name _____ E-mail _____
Corrections Director

Address _____ Phone _____

This portion of the questionnaire concerns adults only.

1. How many offenders are currently in your corrections facilities? _____
Male Female
2. How many offenders are currently in your community corrections system? _____
Male Female
3. Average cost of care per offender in corrections facilities:
per _____ or _____ or _____ or _____
day week month year
4. Average cost of care per offender in community corrections:
per _____ or _____ or _____ or _____
day week month year
5. What percent of offenders have substance abuse problems in your state?
In corrections facilities? _____
In community corrections? _____
6. Do you have data on substance abuse by gender in your corrections system? Yes No
7. If #6 is yes, what percent of women have substance abuse problems? Circle one
0 10 20 30 40 50 60 70 80 90 100
8. If #6 is yes, what percent of men have substance abuse problems? Circle one
0 10 20 30 40 50 60 70 80 90 100
9. Do you have adequate substance abuse treatment services in your state corrections system?
(Circle one) Yes No
10. What is the total annual cost of substance abuse services in your corrections system? _____
11. Do you have an estimate of per offender substance abuse treatment cost?
(Circle one) Yes No
12. If #11 is yes, how much does treatment cost per treatment episode (not per session) _____
13. Do offenders with mental retardation have access to specialized programs for persons with
mental retardation? In corrections facilities? Yes No
In community corrections? Yes No
14. Do pregnant offenders with substance abuse problems have access to specialized programs?
In corrections facilities? Yes No
In community placements? Yes No
15. Can you estimate the number of pregnant offenders in corrections facilities? _____
/in year()

Can you estimate the number of pregnant offenders in community corrections? /in year()

16. Do you have offenders with FAS or Alcohol Related Neurodevelopmental Disorders awaiting execution in your state? Yes No

17. If #16 is yes, how many? _____

Questions on FAS screening, diagnosis and intervention

18. Do you have specific policies on identification of offenders with FAS in corrections facilities? Yes No

19. Do you have specific policies on identification of offenders with FAS in community corrections? Yes No

20. Do you have a Fetal Alcohol Syndrome and Alcohol Related Neurodevelopmental Disorders screening program to identify affected offenders in corrections facilities? Yes No

21. If #20 is yes, are all offenders in corrections facilities screened? Yes No

22. Is the screening mandatory? Yes No

23. Do you have a Fetal Alcohol Syndrome and Alcohol Related Neurodevelopmental Disorders screening program to identify affected offenders in community corrections? Yes No

24. If #23 is yes, are all offenders in community corrections screened? Yes No

25. Is the screening mandatory? Yes No

26. Do you have access to a diagnostic team to evaluate and diagnose FAS and Alcohol Related Neurodevelopmental Disorders?
In corrections facilities? Yes No
In community corrections? Yes No

27. Do you have specialized treatment programs for persons with FAS or Alcohol Related Neurodevelopmental Disorders?
In corrections facilities? Yes No
In community corrections? Yes No

28. Would you support the development of a screening program for FAS and Alcohol Related Neurodevelopmental Disorders in your state corrections system? (The screening would likely take 20 minutes per offender)
In corrections facilities? Yes No
In community corrections? Yes No

29. Can you estimate the number of diagnosed cases of FAS and Alcohol Related Neurodevelopmental Disorders (ARND)
In corrections facilities FAS # _____ ARND # _____
In community corrections FAS # _____ ARND # _____

Questions on training and training needs

30. How many staff do you have:
In corrections facilities? _____
In community corrections? _____

31. What percentage of your state corrections systems have had an in-service training on FAS and related disorders in the past 3 years?

In corrections facilities

0 10 20 30 40 50 60 70 80 90 100

In community corrections

0 10 20 30 40 50 60 70 80 90 100

32. How many new staff are hired each month?

In corrections facilities?

In community corrections?

33. Have your corrections system staff had adequate training on recognition of FAS and Alcohol Related Neurodevelopmental Disorders? Yes No

34. Would you support the development and funding of a diagnostic evaluation component for FAS and Alcohol Related Neurodevelopmental Disorders? Yes No

35. Please rate which type of training would be most useful in your state or province.

1-most useful to 5-least useful

_____ A manual and video tape of screening and diagnosis

_____ A CD based program

_____ A Train the Trainers workshop

_____ Regional conferences involving several states or provinces

_____ Regional conferences in your state or province

36. Estimate how many staff need to be trained in your state or province.

37. Have you (Director of Corrections Services) attended a training program on FAS and Alcohol Related Neurodevelopmental Disorders in the past 3 years? Yes No

38. Would you (Director of Corrections Services) be willing to attend a training program? Yes No

39. Do you have any information available on FAS or Alcohol Related Neurodevelopmental disorders in your state you could share with us? If yes, please send us copies to: Yes No

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If you have comments or other information on FAS we would like to hear from you.