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Substance Abuse

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Substance Abuse Related Special Needs in Canada: Best Practices for Prevention

Jillian Stockburger

This report provides an overview of the research and findings regarding substance abuse related special needs. It includes a synopsis of the physical and developmental effects of the prenatal consumption of illicit drugs¹ and alcohol and it discusses three levels of 'best practices' for the prevention of substance abuse related special needs. These are: 1) population health (primary prevention), 2) indicated prevention for at risk individuals (secondary prevention), and 3) high risk, pregnant and not yet pregnant women (tertiary prevention). The review of research and findings related to these best practices are framed by a critical examination of the cultural and societal factors that can influence perceptions toward women who use substances.

¹ For this paper, illicit drugs refer to substances for which the possession, consumption and distribution of, are not sanctioned by law.

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Sommaire Exécutif

Le présent rapport a pour but d'identifier les pratiques exemplaires visant à prévenir les besoins spéciaux liés à la toxicomanie causés par l'exposition du fœtus à l'alcool et aux drogues illicites. Première partie d'une série en deux volets réalisée par le Centre d'excellence pour les enfants et les adolescents ayant des besoins spéciaux : groupe de travail de l'Université du Nord de la Colombie-Britannique sur la toxicomanie, ce rapport porte sur les pratiques exemplaires de prévention et d'intervention à l'égard des besoins spéciaux liés à la toxicomanie causés par l'exposition prénatale à l'alcool et aux autres drogues. Les pratiques exemplaires ont été déterminées en étudiant la documentation didactique pertinente et accessible, approuvée par des pairs, ainsi que les évaluations de programmes de prévention des besoins spéciaux liés à la toxicomanie (y compris mais non de façon limitative le syndrome d'alcoolisme fœtal, et autres déficiences congénitales liées à l'alcool).

Cette étude a été rédigée en reconnaissant les perceptions négatives souvent prédominantes à l'égard des femmes (surtout des femmes enceintes) et la toxicomanie. Ce rapport débute par un sommaire des résultats connus relatifs aux conséquences physiologiques et développementales de l'exposition prénatale à l'alcool et aux autres drogues.

Les recommandations du rapport sont axées sur la nécessité de mettre en œuvre des efforts de prévention de la toxicomanie à l'échelle communautaire qui s'attaquent aux causes profondes de l'abus d'alcool et autres drogues. Il attire l'attention sur les besoins souvent négligés des femmes vivant en milieu rural, des femmes autochtones et des minorités ethniques du Canada (notons cependant que ces thèmes sont traités de façon plus adéquate dans des documents distincts). Il fait la promotion d'un dépistage respectueux, d'activités de prise de contact avec les communautés et d'intervention auprès des femmes à risque d'avoir un enfant ayant des besoins spéciaux liés à la toxicomanie.

En ce qui concerne le traitement de la toxicomanie et les soins prénataux des femmes consommant des substances, ce rapport recommande des stratégies de programmation qui répondent à la plupart des besoins de la femme, comprenant entre autre une approche visant la réduction des préjudices et un traitement axé sur la culture et sur la femme. Les programmes et les activités pourraient également répondre aux besoins des femmes en fournissant une assistance pratique, notamment le transport, la garderie, l'alimentation, l'éducation, la formation, et le logement.

Ce rapport conclut en notant les lacunes actuelles en matière de recherche, d'évaluations de programmes et de modèles de programmes. Certaines de ces lacunes touchent les modèles de recherche et de programmes pour les femmes vivant en milieu rural, les travaux de recherche évaluant les conséquences développementales à long terme pour les enfants et les adolescents exposés à la toxicomanie pendant la grossesse, et les stratégies de prévention s'attaquant aux causes profondes de l'abus d'alcool et d'autres drogues.

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Executive Summary

The purpose of this report is to identify best practices for the prevention of substance abuse related special needs that arise from exposure to alcohol and illicit drugs during the fetal stage. This paper is the first part of a two part series done by The Centre of Excellence for Children and Adolescents with Special Needs: UNBC Task Force on Substance Abuse, on best practices that address prevention and intervention of substance abuse related special needs caused by prenatal substance exposure. Best practices have been determined by a review of the relevant and available academic and peer reviewed literature and program evaluations that are related to prevention and substance abuse related special needs (including, but not limited to, Fetal Alcohol Syndrome and other Alcohol Related Birth Defects).

This review was written with acknowledgement of the negative perceptions that often prevail regarding women (particularly pregnant women) and substance use. The report begins with a synopsis of the available findings regarding the physiological and developmental effects of prenatal substance exposure.

The paper's recommendations centre on the need for community-wide substance use prevention that address the root causes of substance use. It draws attention to the often forgotten needs of rural women, Aboriginal women, and ethnic minority women in Canada (though it should be noted that these topics are most adeptly approached through their own papers). It promotes respectful screening, outreach and intervention activities for women at risk for having a child with substance abuse related special needs. Regarding substance abuse treatment and pre natal care for pregnant women using substances, this report advises program approaches that meet the majority of a woman's needs. This is likely to include a harm reduction approach and culturally specific, women-centred treatment. Program approaches and activities may also meet women's needs by providing practical assistance, such as transportation, childcare, food, education and training, and

housing.

This paper concludes by noting the current gaps in existing research, program evaluations, and program models. Some of the gaps mentioned include research and program models for women in rural areas, research that evaluates the long-term developmental effects that result from children and adolescents exposed to substance use other than alcohol during pregnancy, and prevention strategies that address the root causes of substance use.

Introduction

Canadians' understanding of alcohol and drugs has not been static. Without discounting the real health and social problems that can arise from the misuse of drugs and alcohol, it is important to note that our perception of drugs and alcohol as 'dangerous' and 'immoral' have stemmed not from any physical and chemical properties inherent to the substances, but from their perceived threat to moral and social order (McDonald, 1994). In general, negative perceptions were formed about alcohol and drugs at the time in history when they would be associated with 'negative' aspects of society, such as visible consumption by the poorer, working class, or when drugs and alcohol could be associated with moral and legal disintegration, such as during the 'lawless' western frontier in the US. For example, until the late nineteenth-century, opium was an acceptable form of self-medication in western society (McDonald, 1994). Although the issue was quickly picked up by, and continues to be addressed through, the medical system, the use of drugs and alcohol is influenced far more by psychological and social factors than by any pharmacological aspects of the drugs (McDonald, 1994; see also Whynot, 1998).

When dealing with the politically and socially contentious topic of substance abuse, one must also recognize the way in which race, gender, and class have intersected with the subject, ultimately influencing the manner in which we approach substance abuse. Twenty years ago, alcoholism and drug abuse were primarily considered a 'male' disease (Finkelstein, 1994). The different contributing factors to women's involvement with drugs and alcohol, and the needs of women in substance abuse treatment, have only recently been integrated into the substance use literature and debate (Finkelstein, 1994). In addition to this lack of 'women-centred' knowledge, substance using pregnant women face considerable stigma, including perceptions that they are bad mothers, are committing 'child abuse' for risking the health of their fetuses (Field, 2000), and are morally inferior and otherwise weak-willed for becoming addicted (Finkelstein, 1994). Aboriginal issues have not been ignored in discussions regarding substance abuse related special needs, however questions remain regarding the way in which Aboriginal concerns have been contextualized in the research (Warry, 1998; York, 1992). Questions may include whether or not there is an assumption

of increased risk for special needs resulting from substance abuse in Aboriginal populations, and if so, what effect would this assumption have on research?

While approximately one third of Canadian women reside in rural areas (Health Canada, n.d.), research regarding substance use and subsequently substance abuse related special needs rarely address the social, cultural, and economic barriers of these different geographies. Most research sites and programs that have published evaluations involve urban populations. Without adequate research it is difficult to presume the ways in which findings will transfer to rural settings.

In attempting to understand and address substance abuse, it is important to recognize the societal context and its implications on our perceptions, knowledge, policy, and research. It is also important to acknowledge that the common placement of moral and social value on chemical substances can influence the research area, methods, populations studied, and results (Greenwood, Healy, & de Leeuw, 2002).

Definitions

Within this paper, 'best practices' refer to: 1) recommended methods, techniques, and approaches found in published program evaluations and government documents, 2) methods, techniques and approaches found to have a positive influence on the prevention and/or harm reduction of substance abuse related special needs in academic literature and peer reviewed journals².

The term 'special needs' refers to individuals "who require additional public or private resources beyond those normally required to support healthy development" (Organization for Economic Cooperation and Development, 2000 as cited in Centre of Excellence, 2002, p. 2). Children and

² 'Best Practices' is a challenging concept to articulate as it has been used in a variety of contexts with a variety of meanings. For example, Roberts and Nanson (2000) have prepared a document, *Best Practices: Fetal Alcohol Syndrome/Fetal Alcohol Effects and the Effects of Other Substance Use During Pregnancy*. Their criteria for 'best practices statements' are "based on scientific evidence and/or on the perspectives of consumers, expert practitioners and educators" (p.2). Their statements are based primarily on the scientific literature, and include distinctions between 'some', 'moderate', and 'good' levels of evidence, levels which depend on the reliability and reproducibility of studies that support best practice statements. Although this paper has not qualified best practice statements in this manner, all studies and program evaluations were critically examined for the integrity and reliability of their research methods.

adolescents who require additional resources because of exceptional gifts and talents³, physical, sensory, cognitive, and learning challenges, mental health issues as well as problems due to social, cultural linguistic, or family factors (Centre of Excellence, 2002). When these factors are understood to have been the direct result of substance abuse it will, for the purpose of this paper be understood as being Substance Abuse Related Special Needs (SARSN).

Through this definition of special needs, and subsequently substance abuse related special needs, SARSN in children and adolescents could manifest in numerous ways. These include: 1) additional supports and resources required for children and adolescents who have drug and alcohol addiction or affliction, including the need for drug and alcohol counselling, learning supports, or health intervention; 2) developmental or neurophysiological detriments that result from the direct and purposeful consumption of drugs and alcohol by the child or youth; and 3) special needs resulting from the biological and environmental detriments that may occur to a child's development when a woman consumes drugs or alcohol while pregnant. Due to time and space restraints, along with the limited research available addressing this topic, substance abuse related special needs involving the direct consumption of alcohol and drugs by children and adolescents (numbers (2) and (3)) will not be addressed in this paper. This report will also limit its discussion to alcohol and illicit drugs such as cocaine, opiates, cannabis, inhalants, and other psychoactive drugs (hereafter referred to as 'drugs'). Although important issues in our society, due to space restrictions, this paper will not address the effects of tobacco or the misuse of licit drugs, including prescription and over the counter drugs.

³ It should be noted that there has been no identified link between pre-natal substance abuse and exceptional gifts and talents in children and youth.



Methods

The literature reviewed herein includes primarily academic writing in peer reviewed and professional journals, federal and provincial government documents related to best prevention practices for SARSN, and books and internet sources when they were found to be credible. Search methods included use of the Online Databases of Academic Search Elite, Humanities and Social Sciences Index, and PsychINFO. Bibliographies of relevant literature also proved to be a valuable source of information. Literatures reviewed were chosen on the basis of their relevancy to the topic of best practices, applicability of findings to the Canadian context, and the date of publication. Like many literature reviews, consideration of time constraints was a guiding factor regarding which publications were obtained. For instance, scarce and difficult to obtain documents such as local program evaluations were often not available. Of the relevant and available documents, literature would be included if: 1) it had been published within the last ten years (literature published prior to ten years ago would be included if it provided information not in the available and more recent literature); and 2) was deemed credible through an examination of the paper's methods.⁴ The date of publication criteria gave precedence to recent findings and knowledge that have been accumulated over the past three decades, or since attention was drawn to substance abuse related special needs, such as Fetal Alcohol Syndrome (FAS). Literature would be excluded if it did not meet the above inclusion criteria. Within the range of acceptable and available literature, some topics produced vast amounts of reports (particularly studies regarding birth outcomes for fetuses exposed to alcohol or cocaine during pregnancy). For these topics, the literature was screened for representative samples while attempting to include the most recent and relevant studies.

⁴ When examining research methods, the author was open to quantitative and qualitative studies that used either 'traditional' methods centred on the scientific method and/or participatory research, as long as the methods were appropriately systematic and clearly stated. Reports would be excluded if statements or conclusions were not supported by adequate references or data. For instance, a report was excluded upon reading the following unsubstantiated comment: "It is clear that when the mother or another care giver is frustrated by a demanding and irritable baby and is unprepared to provide informed care to an 'at risk' infant, the child is likely to be neglected or abused" (Waters, Roberts, & Morgen, 1997, p. 551). An examination of the assumptions and representations within the scientific literature regarding pregnant women and substance use would make an interesting study unto itself.

IV

Overview of Substance Abuse Related Special Needs

Effects of Alcohol Use During Pregnancy

Perhaps the most widely known substance abuse related special need is Fetal Alcohol Syndrome (FAS). Prior to the seminal report of the US Institute of Medicine (IOM) titled “Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention, and Treatment” (Stratton et al. [eds.], 1996 as cited in Warren & Foudin, 2001), there were few consistent or universal uses of the terms Fetal Alcohol Syndrome and Alcohol Related Birth Disorders. Terms used included full FAS, partial FAS, Fetal Alcohol Effects (FAE), possible Fetal Alcohol Effects (PFAE), and others (Health Canada, 1996; Larkby & Day, 1997; Streissguth, 1997). Definitions and terminology now more consistently reflect the five IOM diagnostic categories. They are:

1. Fetal Alcohol Syndrome (FAS) with a confirmed history of maternal alcohol exposure requiring evidence of facial dysmorphology, growth retardation, and central nervous system (CNS) dysfunction;
2. FAS without confirmed maternal exposure requiring evidence of facial dysmorphology, growth retardation, and CNS dysfunction;
3. Partial FAS (pFAS) requiring a confirmed history of prenatal alcohol exposure, facial dysmorphology, and either growth retardation or CNS abnormalities;
4. Alcohol-related birth defects (ARBD) to denote the presence of congenital anomalies (e.g. cardiac, skeletal, renal, ocular, auditory) known to be associated with a history of prenatal alcohol exposure;
5. Alcohol-related neurodevelopmental disorder (ARND) requiring a confirmed history of prenatal alcohol exposure and evidence of CNS abnormalities. (Stratton et al. [eds.], 1996 cited in Roberts & Nanson, 2000, pp.49-50).

Note that diagnostic categories 3-5 require confirmed maternal alcohol exposure because “phenotypes for these diagnoses are not considered unique enough to be ascribed to prenatal exposure without evidence of drinking” (Warren & Foudin, 2001, p. 155).

As this review focuses primarily on the prevention of special needs that stem from substance abuse, (rather than the medical intricacies that result from substance abuse), and because of the widespread and common use of the terms, Fetal Alcohol Syndrome (FAS) and Alcohol Related Birth Defects (ARBD) will be used to indicate substance abuse related special needs resulting from alcohol use.⁵

The evidence that alcohol acts as a teratogen is extensive (Clark, Li, Conry, Conry & Loock, 2000; Larkby & Day, 1997; Moore & Persaud, 1998; Maier & West, 2001). Connor & Streissguth (1996) discuss how animal studies have shown various forms of damage to the brain can be caused by fetal exposure to alcohol, including brain size (Goodlet & West, 1992 as cited in Connor & Streissguth, 1996), damage to the basal ganglia and cerebellum, ventricles, (Goodlet & West, 1992, Mattson et al., 1994, Bonthius et al., 1996 as cited in Connor & Streissguth, 1996), and an overall reduction in the number of some types of brain cells, such as in the cerebral cortex, and damage to pyramidal cells in the hippocampus (Riley et al., 1986 & Goodlet & West, 1992, as cited in Connor & Streissguth, 1996).

Heavy prenatal alcohol exposure manifests itself in deficits of both cognitive functioning (such as learning, memory, and executive functioning) and motor performance (Mattson, Schoenfeld, & Riley, 2001). Studies have also shown that children with FAS or other ARBD are also at high risk for problem behaviours that can interfere with their participation in home, school, and social environments (Mattson et al., 2001; Streissguth, 1997).

A number of factors render the causes of FAS and ARBD more complex than medical research is able to denote. These factors include the extent to which the patterns and amount of drinking play a role in the developing fetus, and how the factors of nutrition, prenatal care, genetic vulnerability, and lifestyles of the parent either compound or negate the negative influences of alcohol. The

⁵ The term Fetal Alcohol Spectrum Disorder (FASD) is another term that is gaining widespread use, however the terms Fetal Alcohol Syndrome and Alcohol Related Birth Defects will be used in this paper as they specifically reflect IOM diagnostic categories.

occurrence of FAS and ARBD has a variety of contributing factors in addition to maternal consumption of alcohol while pregnant, as not every child born to a woman who drinks while pregnant will have FAS or even ARND (Warren & Foudin, 2001). Canada currently lacks data on the numbers of children born affected with FAS, however the British Columbia FAS Resource Society estimate incidence of full FAS from 1 in 500 births to 1 in 3000 births, and holds that the rate of other alcohol-related effects are estimated to be 5 to 10 times higher (B.C. FAS Resource Society, 1998). US studies, such as Abel (1995, as cited in Warren & Foudin, 2001) estimate that 4.3 percent of heavy drinkers give birth to an FAS child, and Coles (1991) reported that "half of children of heavy drinking women were not abnormal" (as cited in Warren & Foudin, 2001, p. 155). In addition to the teratogenic affects of alcohol, a fetus can be at risk for alcohol induced SARSN through 1) physical consequences of the mother's alcoholism (for example falls or malnutrition); 2) genetic vulnerability of the fetus may increase the effects of alcohol exposure; and 3) the lifestyle of an alcoholic parent may lead to negative consequences for the fetus and the developing child (Larkby & Day, 1997). Therefore, while it is clearly important to note the evidence of alcohol as a contributor to SARSN, it is also clear that not all women who drink large amounts of alcohol while pregnant will give birth to an FAS affected child, and that other factors are thus worthy of note and review. As discussed in Warren & Foudin (2001), risk factors include maternal age (Sokol et al., 1986; Jacobsen et al. 1996), socioeconomic status (Abel, 1995), ethnicity (Abel & Hannigan, 1995), genetic factors (Goodlet et al., 1989; Streissguth & Dehaene, 1993; Rasheed et al., 1997; Su et al., 2001; Warren et al. 2001), and others (all as cited in Warren & Foudin, 2001).

The role of environmental factors, and the lack of definitive data for alcohol threshold levels that cause FAS or ARBD are important issues when discussing prevention methods. Fetal Alcohol Syndrome (FAS), ARBD, and ARND are not only medical issues; but rather result from the social determinants of health such as poverty, poor housing, and poor nutrition, as well as from the teratogenic effect of alcohol on the fetus. Therefore, when discussing best practices for the prevention of FAS, ARBD and other SARSN, prevention efforts must include knowledge regarding the role of environmental contributors.

Although there are no known levels of drinking that have been determined safe for pregnant women, high risk drinking is considered to be five or more drinks per occasion or at least seven drinks per week (Roberts & Nanson, 2000). There is some evidence that binge drinking while pregnant creates a higher risk for harm to the fetus (Maier & West, 2001). Prevention efforts directed toward low levels of drinking while pregnant may not be effective and may have the adverse effect of causing unnecessary fear and possible termination of pregnancy for women who have continued to drink before they know they are pregnant (Roberts & Nanson, 2000).

Effects of Illicit Drugs, Inhalants, and Poly-substance Use During Pregnancy

While there is a plethora of research available regarding special needs resulting from intrauterine alcohol exposure, there is no concurring plethora of research on other drugs. Although a considerable amount of research has been performed on the effects of intrauterine exposure to cocaine and crack (with conflicting results), we have very little evidence on the negative impacts of other drugs, such as heroin, LSD, ecstasy, inhalants, or cannabis. Extensive media attention to the 'crack baby' phenomenon generated perceptions that children prenatally exposed to cocaine were irreparably damaged, and would face devastating problems throughout childhood; however these predictions have not been realized (Delaney-Black et al., 2000; Lester et al., 2002)

Existing research does not indicate the presence of a set of consistent congenital abnormalities or negative childhood development outcomes that can be clearly linked or attributed to the use of illicit drugs during pregnancy (Askin & Diehl-Jones, 2001; Behnke, Eyler, Garvan, & Wobie, 2001; Delaney-Black et al., 2000; Zuckerman & Frank, 1992). Some research has shown that prepartum exposure to cocaine is associated with a number of negative outcomes in newborns. These include an increased frequency of abruptio placentae (Little et al., 1999), meconium stained amniotic fluid (Little et al., 1999), premature rupture of membranes (Little et al., 1999), premature birth (Behnke et al., 2001), genitourinary anomalies (Little et al., 1999), abdominal wall defects (Little et al., 1999), an increased frequency of low birth weight (Bandstra et al., 2001; Behnke et al., 2001; Hadeed & Siegel, 1989; Little et al., 1999; Mayes, Granger, Frank, Schottenfeld & Bornstein,

1993), and smaller head circumference or microcephaly (Behnke et al., 2001; Chasnoff, Griffith, Freier & Murray, 1992; Hadeed & Siegel, 1989). Other studies have indicated that the occurrence of small head circumference is the result of overall decrease in birth size, and that the reduction of fetal growth was sometimes caused by the direct use of cocaine, however the reduction in gestational age could also be a contributor to lowered birth weight in some instances (Bandstra et al., 2001). Many studies that have been performed to investigate the effects of prenatal cocaine exposure have been critiqued for failing to use appropriate control groups of the same socioeconomic status, for the use of alcohol, for the use of tobacco, or for poor nutrition, all of which are known contributors to negative birth outcomes (Zuckerman & Frank, 1992).

The existence of long-term, post-infant, negative outcomes for children born with cocaine exposure during the fetal stage, is yet to be determined. Although prenatal exposure to drugs such as cocaine may affect the central nervous system, this potential for developmental impairment “may be compensated partially or completely by the brain itself and/or by competent caretaking” (Zuckerman & Frank, 1992). Despite the controversy over what the effects of prenatal cocaine exposure might be, there appears to be consensus that prenatal exposure to cocaine does not show a consistent pattern of physical abnormalities like those shown to occur from prenatal alcohol exposure.

Negative developmental or behavioural outcomes may (or may not) be linked to prenatal exposure to cocaine and other drugs. Fewer studies investigate this matter, and determining a definitive correlation between substance exposure and developmental or behavioural outcome will be difficult for a number of reasons. First, there are inherent difficulties in developmental or behavioural assessments that are simultaneously sensitive to detecting subtle effects, while being flexible enough to account for the varied rates at which children develop. Secondly, the development and behaviour in children result from a number of contributors, and it may be difficult to link conclusively that (for example) the behaviour and development of a group of three year old children is a result of substance exposure, and not poverty, poor nutrition, or the use of tobacco during pregnancy, or that effects of substance exposure were not mitigated by positive early childhood experiences.

A number of studies have attempted to determine long-term effects of prenatal cocaine (and other substance) exposure. No studies reviewed successfully address all the variables that would be necessary to yield a conclusive result; studies acknowledged the specificity of their inquiry and were not able to account for the holistic nature of many contributing factors to SARSN. Most studies were US-based (except one on inhalant abuse), focused on urban populations, and often concentrated on specific populations (for example, inner-city black mothers) thus posing questions about sampling bias and the transferability of results to Canadians living in northern and rural locales (see for example Faden & Graubard, 2000).

Chasnoff et al. (1992) found children prenatally exposed to drugs (marijuana, cocaine, and alcohol) did not have significantly lower mean scores at the age of two on the Bayley Scales of Infant Development in comparison with the control group. However, they noted that cocaine exposure was “found to be the single best predictor of head circumference” and noted there was a “significant correlation between small head size and developmental scores” (Chasnoff et al, 1992, p. 284).

Singer et al. (2001) assessed developing language skills of one-year-old infants who were prenatally exposed to cocaine. The study found significant effects in infants who were exposed to cocaine, including “attentional abilities underlying auditory comprehension skills considered to be precursors of receptive language” (p.1057). Delaney-Black et al. (2000) performed a study to determine behaviour (as assessed by their teachers) of six- year-old children prenatally exposed to cocaine. They report that exposed children did not have higher incidence of the measured behavioural problems than a control group, however exposed children did have a greater difference between Internalizing scores and Externalizing scores⁶ (Delaney-Black et al., 2000). No indication was offered in the report as to what having behaviours that resulted in greater differences of Externalizing-Internalizing scores may amount to on a day to day basis for children,

⁶ Internalizing behaviours were a group of behaviours that included being withdrawn, having somatic complaints, and being anxious/depressed. Externalizing behaviours included delinquent and aggressive tendencies.

parents, or teachers, or how scoring may be of issue for these children as they grow and develop.

Faden and Graubard (2000) studied the gestational impact of alcohol, marijuana, and tobacco on the development of children at age three. They found higher incidence of parental reported behavioural problems associated with children who were exposed to any of the three substances. They did not, however, find a measurable difference in developmental delays. Faden and Graubard state "it may be that the effects of substance use during pregnancy, especially more subtle ones, show up in behaviour before they can be measured by developmental scales" (p.329). Despite not finding significant developmental delays in prenatally exposed children, Faden and Graubard (2000) do not discuss the possibility that this type of exposure does not in fact lead to developmental delays. This type of response to findings was not uncommon in the reviewed literatures (see Chasnoff et al., 1992; Delaney-Black et al., 2000).

Lester et al. (2002) and Frank et al. (2002) are an exception to the above noted trend. Their studies clearly indicate the short and long term implications for children who have had exposure to the studied substances. The study of the effects of prenatal substance exposure (cocaine and/or opiate) on neurodevelopmental outcome in 1-month old infants by Lester et al. (2002) concludes "cocaine effects are subtle and can be detected when studied in the context of polydrug use and level of cocaine exposure" (p. 1182). They state "long-term follow up is necessary to determine whether these differences develop into clinically significant deficits" (p. 1182). Their results show "reliable but small differences" (p. 1190) with short and long-term implications. With regards to short-term implications, they suggest that

the drug-exposed infant is probably best thought of as an infant 'at risk' rather than an infant with a known disorder. ... The clinical implications of considering these infants as 'at risk' infants are that with intervention, later deficits can be prevented. (p. 1190)

In discussing long-term implications of prenatal substance exposure, they mention, "it may be that cocaine affects areas of the brain that we cannot evaluate in infancy or that are not manifested until children are older, such as executive function" (p.1190).

An assessment concerning the association between prenatal cocaine exposure and infants' developmental test scores, performed by Frank et al. (2002), presents an extensive list of potential confounding variables that include gestational age, birth weight, involvement in intervention activities, caretaker's access to social supports, caretaker's exposure to violence, child placement history, and others. The study showed cocaine, acting independently, did not adversely affect developmental test scores during the studied ages up to 24 months. However, they "observed a number of important interaction effects of level of cocaine exposure with biological and social factors" (p. 1150). These factors include cocaine exposed infants who have a birth weight below the tenth percentile for gestational age and gender, and child placement circumstances that may decrease opportunities to available resources (in this case, kinship caregivers). Due to the study's site and sample selection (the population studied was predominantly African Americans in an urban setting), Frank et al. caution against generalizing findings to other areas and populations. Infants with heavier cocaine exposure who took part in child-focused developmental interventions had significantly higher scores on the Bayley Scales of Infant Development than either non-exposed infants who participated in interventions or heavier cocaine exposed infants who did not partake in intervention activities. Frank et al. recommend the referral of cocaine-exposed children to child-focused developmental intervention programs.

Less data is available regarding the effects of drug exposure (other than alcohol and cocaine) on the developing fetus. Only two studies were available on inhalant abuse. One study was found exclusively concerned with cannabis, and only a few studies incorporated 'substance abuse' which often implied multi-drug use, including cocaine, alcohol, and cannabis. No studies were found that looked at the effects of gestational exposure to LSD, ecstasy (MDMA), heroin, or other drugs. This limitation should be kept in mind when considering the evidence that exists which suggests that substance abuse during pregnancy directly manifests itself in special needs in children and youth.

Dodd (2001) investigated petrol sniffing in a pregnant Australian Aboriginal population. The research consisted of a group comparison between a petrol sniffing group and a non-petrol sniffing

control group, and was done by retrospective case note review, which compared birth and maternal outcomes between these two groups. Therefore, results determine only correlation and not necessarily causation. Dodd concluded,

The pregnancy complicated by petrol sniffing should be recognized as one at increased risk of adverse outcome, and one necessitating increased antenatal surveillance. As with other substances abused, it is extremely difficult to determine the role played by the substance per se, and that of the lifestyle associated with the abuse behaviour. (p. 423)

Jones and Balster (1998) compiled information generated from numerous other studies related to inhalant abuse during pregnancy. In the United States, prevalence of inhalant abuse is surpassed only by marijuana, alcohol, and tobacco among adolescents (Jonston & O'Malley, 1994 cited in Jones & Balster, 1998). Jones and Balster note that the majority of information on inhalant abuse during pregnancy stems from studies done on occupational exposure to some of the same chemicals that are sometimes deliberately inhaled to achieve intoxication. In other words, a limitation of the work of Jones and Balster is most of their data is from studies that were performed within an occupational, not intentional, setting. As a whole, these occupational studies do not yield conclusive results that can be transferred to situations of inhalant abuse. However, there is notable evidence of pregnancy complications, such as spontaneous abortions (Hemminki, Franssila, & Vainio, 1980, & Lindblom, 1995; Shumilina, 1975 as cited in Jones and Balster, 1998) and negative birth outcomes, such as central nervous system defects (Holmberg, 1980 as cited in Jones & Balster, 1998) caused by occupational exposure to solvents, to draw concern toward solvent abuse during pregnancy (Jones & Balster, 1998). Jones and Balster drew similar conclusions about exposure to nitrous oxide anaesthesia. Direct comparisons between infants exposed in utero to toluene fumes and infants with Fetal Alcohol Syndrome have been made, resulting in observations of similarities, including similar craniofacial anomalies (Pearson, Hoyme & Seaver, 1994 as cited in Jones & Balster, 1998). However, because of the common concurrent use of alcohol with inhalants, it may be that toluene potentiates the adverse effects of alcohol (Jones & Balster, 1998). Animal studies of in-utero exposure to toluene and trichloroethane (TCE) have yielded inconsistent results regarding postnatal development and behaviour. In response to

this, Jones and Balster conducted several of their own animal studies. The results of the experiments suggest that both TCE and toluene produce a pattern of developmental and behavioural delays similar to the pattern produced by established teratogens, such as alcohol (Jones & Balster, 1998).

Astley, Clarren, Little, Sampson, and Daling (1992) found that prenatal marijuana exposure was not associated with Fetal Alcohol Syndrome-like facial features. Hanna, Faden, and Dufour (1997) found that drinking and smoking (either independently and/or interactively with depression) account for negative birth outcomes, or adverse health consequences in live births, based on a U.S. national mail out survey. Cocaine and marijuana use during pregnancy were not found to be correlated with negative birth outcome or poor infant and maternal health in this study. Fergusson, Horwood, and Northstone (2002) found “evidence that regular use of cannabis during pregnancy may result in a reduction in birthweight that is statistically independent of maternal and social background, maternal characteristics or other substance use behaviors during pregnancy” (p. 25). Although they found *evidence* that cannabis *may* affect birth weight, it is important to note that “after adjustment for confounding factors, the association between cannabis use and birthweight failed to be statistically significant” (p. 21).

With the conflicting studies and sometimes confusing conclusions that surround a review of the pre-natal cocaine (and other substances) exposure research, Berger & Waldfogel (2000) state:

Although the effects of cocaine exposure in utero may be less dire than anticipated on the basis of the earlier infant studies, the more recent longitudinal studies suggest that it would be a mistake to assume that prenatally exposed children are not at risk. A common theme in the literature is that cocaine exposure rarely occurs in isolation. Adding to the biological risks of both prenatal exposure to cocaine and prenatal exposure to other substance that are frequently used with cocaine, environmental factors have been found to ‘play a decisive part in determining development—either helping the child to overcome the [biological] vulnerability [created by prenatal exposure] or placing the child at greater risk of harm’ (Mathias 1992, p. 14). (Berger & Waldfogel, 2000, p. 36)

This paper will approach best prevention practices for children and adolescents with substance abuse related special needs by considering numerous biological, social, and environmental factors, including the effects of substance use and abuse that may contribute to the physiology of children and youth with special needs, in addition to considering the social environments that may contribute to special needs. Within this paper, best practices refer to: 1) recommended methods, techniques, and approaches found in published program evaluations and government documents, 2) methods, techniques and approaches that been found to have a positive influence on the prevention and/or harm reduction of SARSN in academic literature and peer reviewed journals.

V

Prevention of Substance Abuse Related Special Needs

Discussion concerning prevention methods of SARSN can be separated into the three categories: primary prevention, secondary prevention and tertiary prevention. "Primary prevention activities are undertaken with a healthy population to maintain or enhance physical and emotional health. Primary prevention activities typically focus on behaviour change, systems, or the environment" (Roberts & Nanson, 2000, p. 13). "The aim of secondary prevention is to identify and address a problem before it becomes severe or persistent. When applied to the issue of substance use during pregnancy, secondary prevention activities target women of child-bearing age who use substances, and include outreach, screening, referral and brief intervention activities. The intent is to promote the health of the mother and prevent or minimize harm to the fetus" (Roberts & Nanson, 2000, p. 19). "Tertiary prevention activities target those for whom FAS [and other substance abuse related special needs are] already a concern. The aim of tertiary prevention is to minimize the damage to the fetus, reduce the likelihood of further affected pregnancies, and increase the capacity of the mother to care for her FAS children effectively (Astley et al., 2000). Tertiary prevention involves intensive multi-component activities, including such strategies as substance abuse treatment, birth control, and parenting problems" (Roberts & Nanson, 2000, p. 28).

The terms primary, secondary, and tertiary prevention associate prevention activities with the current situation of the intended population for that prevention activity. For example, primary prevention is intended for a healthy population, secondary prevention is for those for whom a potential problem exists but the problem is not yet severe or persistent, and tertiary prevention activities are intended for those for whom a problem has already been identified (Roberts & Nanson, 2000). Although these categories are useful classifications when navigating the array of substance use prevention mechanisms, it is important to consider that many practices aimed at preventing special needs related to substance abuse fall under multiple categories. For example, substance abuse treatment programs that serve both women who may become pregnant and women who are already pregnant fall within both categories of secondary and tertiary prevention

programming. Another way to classify prevention efforts is using terms such as universal efforts (efforts directed toward the population as a whole), selected efforts (efforts directed to at-risk women), and indicated efforts (efforts directed toward high-risk women) (Hankin, 2002).

Primary Prevention

Primary prevention involves the “elimination of root causes of a problem by broad-based efforts to promote the health and well-being of a community” (Bloom, 1981 & Last, 1983 as cited in May, 1995). Primary prevention, as it is relevant to special needs resulting from substance abuse, can include any range of activities including, alcohol control measures, public awareness approaches, multi-component awareness strategies, workplace health promotion programs, planned pregnancy programs, life skills, alcohol prevention aimed at adolescents, and health education in high school (Roberts & Nanson, 2000). Other primary prevention activities may include culturally relevant material and diverse methods of communication to reach the intended audience (FAS/FAE Technical Working Group, 1997).

It has been noted that primary prevention efforts are most appropriate when intended for abstainers or light drinkers (May, 1995), and that practices such as warning labels on alcoholic beverage bottles are not effective prevention efforts for women who are most at risk (Hankin, 1994 & Blume, 1996 as cited in Roberts & Nanson, 2000; Stutts, Patterson, & Hunnicutt, 1997). Public education campaigns, such as warning labels, posters and signs, and messages through mass media have been done throughout Canada. However, there has been very little evaluation completed on the effectiveness of these campaigns (Roberts & Nanson, 2000).

Some qualitative studies may provide insight into ways to make public awareness approaches effective. Branco and Kaskutas (2001) performed focus group research with eleven Native American and African American women in the U.S. Branco and Kaskutas reported that exposure and believability of messages, perceptions about risks, and barriers to cutting down as the most prominent factors affecting focus group participants’ drinking during pregnancy. While recognizing the importance of not generalizing information from a small number of research participants,

Branco and Kaskutas conclude that warnings and information should be direct, but not too extreme. Messages that were clearly scare tactics lost credibility with the participants as the women did not consider that information to be believable, and thus more easily dismissed it. Branco and Kaskutas indicated that women required more information than a mandate to abstain from drinking because of possible birth defects in their fetuses; information is required for women who will not abstain (those most at risk), including information on the value of 'cutting down' later in pregnancy. In order to encourage women's efforts to cut-down or abstain, support is also needed from clinicians and persons in the social network. Branco and Kaskutas indicate that health campaigns should recognize that a woman's decision to abstain while pregnant may be a 'lonely choice' particularly if drinking is a prominent part of the pregnant woman's social support network. Participants stated

'I'm a major outcast because I don't drink, I don't smoke, I don't do the drugs... When my grandparents have birthdays and stuff, they don't invite me... they think I'm high-class.'

'Any person who is pregnant, they become a designated driver.'

'You become an adult babysitter.' (Branco & Kaskutas, 2001, p. 338)

These comments indicate the need to educate not only child-bearing women, but the entire population and community on the importance of not drinking during pregnancy. This will result in a supportive, rather than punishing environment for those who chose to cut-down or abstain from drinking during pregnancy.

Xuequin, Toubbeh, Cline, and Chisholm (1998) performed qualitative research with American Indian Youth. Their recommendations for primary prevention include "messages with music, posters, and communication technology tools" and "education in risk factors and effects of alcohol use for young adolescents" (p. 53). Participants indicated multimedia technological communication tools, such as videos, computer programs, and websites are most likely to direct their attention toward alcohol prevention messages. T-shirts and posters were also identified as important. Messages should be simple and straightforward. Participants recommended the use of both traditional aspects of American Indian cultures and contemporary teenage life (Xuequin et al., 1998).

May (1995) examines FAS primary prevention from a theory-based perspective. The author reminds us that primary prevention of Fetal Alcohol Syndrome and Alcohol Related Birth Defects requires more than public education. May notes that successful prevention programs highlight both the individual and societal spheres that influence behaviour. These include the knowledge, attitudes, and beliefs of the individual, in addition to the social structures that surround the person. Primary prevention of FAS should therefore consist of a broad range of approaches that include public education (for example regarding the adverse effects of alcohol and promoting the use of birth control), as well as societal promotion of positive initiatives and socio-economic improvement (for example health, safe pregnancy practices, the value of parenting, and access to education, meaningful jobs, and health care), and changes in laws and rules (such as the elimination of advertising for alcohol and raising taxes on alcohol to lower consumption) (May, 1995).

Although public education is only one part of primary prevention, public education that is directed to women's partners, family, and health and service providers would be an approach to consider. Public education encouraging supportive actions and attitudes toward women who may drink or use other substances during pregnancy may allow for the family and social supports required for women to cut-back or abstain from alcohol or other drugs.

During their review of best practices, Roberts and Nanson (2000) found that alcohol control measures have shown some short-term effectiveness. Likewise, some short-term effectiveness regarding FAS has been found for raising awareness and changing behaviours in some lower-risk women with warning labels and posters. These types of measures used in isolation generally show little effectiveness; greater impact is realized when they are a part of a well-conceived multi-component program that engages members of the community. In addition, Roberts and Nanson mention that there has been some effectiveness found in several school-based substance use problem prevention programs.

Primary Prevention: Conclusions and Recommendations

Public education is a common method by which to approach primary prevention. Although education is an important aspect of this stage of prevention, primary prevention should also include structures that address the multiple responsibility for substance use as a public health issue (May, 1995). Primary prevention should deal with the root causes of substance use, including socio-economic structures, access to education and health services. Although often critiqued for not reaching women most at risk, public education through the mass media can continue to reach the general public.

With reference to the literature reviewed and the conclusions drawn, the following recommendations can be made with regard to primary prevention and substance abuse related special needs:

- Public education and mass media efforts include information on being a supportive partner, family member, and community to help women abstain from (or cut-back on) alcohol consumption during pregnancy.
- Public education and mass media messages include accurate information that recommends abstinence but acknowledges the benefits of decreasing alcohol intake at any stage during the pregnancy.
- Public education and media efforts messages be directed to, and appropriate and attractive for, youth and adolescents.
- Prevention be approached through the root issues of alcohol use and misuse, which often include poverty and low education, lack of accessible health care, and lack of rewarding employment.
- Primary prevention efforts integrate different approaches directed toward change in individual behaviours (for example facts, ideals, and habits) as well as social structures (society's expectations, cultural and social environments and policy). These efforts should also place emphasis on increasing women's agency, rather than relying on punitive measures, in order to approach SARN prevention.

Secondary Prevention

Secondary prevention involves women 'at risk' for bearing a child with a substance abuse related special need. Women 'at risk' would include those with substance use issues who may become pregnant, or for whom prevention activities would be beneficial soon after a pregnancy is recognized. Secondary prevention may include encouraging substance-abusing women to delay pregnancy, encouraging women to stop substance use on their own, or referring women to substance abuse treatment (Roberts & Nanson, 2000; May, 1995). Secondary prevention often includes a variety of programs, strategies, and approaches, including community-based prevention, screening, intervention and outreach.

Community-based Prevention

May's (1995) societal approach to FAS prevention strategies include a variety of secondary prevention activities. For example: identification of high-risk female and male drinkers; providing alcohol use education and treatment; readily available access to many forms of birth control; education on Alcohol Related Birth Defects (ARBD) for professionals; and other environmental and social changes, including alcoholic beverage server training on ARBD, societal emphasis on the public health nature of alcohol misuse, and coordinated treatment activities between health services, social services, and criminal justice agencies.

It Takes a Community: The Framework for the First Nations and Inuit Fetal Alcohol Syndrome and Fetal Alcohol Effects Initiative (FAS/FAE Technical Working Group, 1997) recommend community strategies for FAS prevention. Secondary measures toward prevention include: recognition of pregnancy as special and a gift from the Creator; support from community, family and friends; screening that takes place during regular prenatal history; ally with spouse, family and circle of friends for intervention activities; education during supportive situations, i.e. women's circle's (FAS/FAE Technical Working group, 1997).

Screening

For secondary prevention to be successful, early recognition of substance use is important. Therefore, secondary prevention efforts in the clinical setting involve screening women in the early weeks of pregnancy for substance use issues. Due to the stigma experienced by women with substance use problems, direct questioning often does not result in women readily admitting to substance use. Nonetheless, there are a number of screening instruments available (Roberts & Nanson, 2000). Traditional alcohol screening questionnaires (such as the Michigan Alcoholism Screening Test (MAST) and the CAGE⁷) were designed to detect alcohol dependence in men and are not considered as effective as a tool to detect drinking during pregnancy (Chang, 2001). The T-ACE and the TWEAK are short (one or two minute) questionnaires that can be administered either verbally by the health care provider, or in written format, and are designed to screen for risk drinking during pregnancy, not alcohol dependence. The T-ACE involves four questions about drinking: Tolerance, being Annoyed by people criticizing their drinking, feelings that the respondent ought to Cut down on drinking, and drinking first thing in the morning as an Eye opener (Chang, 2001). TWEAK is a similar screening tool, asking questions about Tolerance, Worry by friends or family of respondent's drinking, the use of drinking as an Eye opener, incidence of drinking induced Amnesia, and the respondent's feelings about the need to (K) Cut down on drinking (Chang, 2001). The questions in these tools were designed to detect drinking patterns that may be considered risky for pregnant women, rather than to detect alcohol dependence (Chang, 2001). While similar instruments to the CAGE, the T-ACE and the TWEAK differ by including a question regarding alcohol tolerance. Tolerance offers a good indicator for levels of alcohol consumption, and the 'socially correct' answer is not known (Chang, 2001).

Corse, McHugh & Gordon (1995) found that worker attitudes toward substance use, and how questions were phrased, had a substantial impact on clients voluntarily revealing substance use. Corse et al. (1995) found that after the implementation of a program providing training on

⁷ The CAGE screening instrument was developed by Ewing in 1984 and consists of four questions: 1) Have you ever felt you should Cut down on your drinking? 2) Have people Annoyed you by criticizing your drinking? 3) Have you ever felt bad or Guilty about your drinking? 4) Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover (Eye opener)? (Chang, 2001).

substance use issues and interviewing techniques to nurse-midwives, 71% of substance using women self-reported their use. This compared with a 24% self report rate prior to the program. For example, one participant of this study stated:

I used to phrase questions like this: 'You don't drink do you?' or 'How about drugs?' and 'You know you shouldn't do that when you're pregnant.' Now I say something like 'How many drinks do you tend to have in a week?' I ask about each specific substance by name. I assume there is use and make it easy for the person to tell me about it. (Corse et al., 1995, p.7)

Screening for substance use during pregnancy, whether by using tools designed specifically for this purpose or by using other non-confrontational and non-judgmental interviewing techniques, has proven to be the first step in successful secondary prevention of SARN. Routine screening is recommended over selective or occasional screening (Legge, Roberts, & Butler, 2000).

Interventions

After recognizing (through practitioner screening or other methods) potential substance use issues which may result in substance abuse related special needs, follow up in the form of intervention is recommended. Handmaker and Wilbourne (2001) reviewed the effectiveness of alcohol interventions held in prenatal clinics. They categorized interventions into three categories: brief interventions, motivational interviewing, and comprehensive care. Comprehensive care will be discussed further under tertiary prevention methods.

Brief interventions are one to three sessions of consultations that may include information, education, or advice with the aim of assisting women to reduce or abstain from substance use during pregnancy (Handmaker & Wilbourne, 2001). A variety of activities are considered brief interventions, including written information, consultations that may include goal setting and referrals to other programs, or referrals to treatment. Brief interventions consistently show outcomes similar to more extended treatment (Bien et al., 1993 as cited in Handmaker & Wilbourne, 2001). In the

clinical prenatal setting, brief interventions have been noted to increase a patient's readiness to change substance use (Handmaker & Wilbourne, 2001). Models for solutions to drug abuse note that 'readiness to change' is an important step toward modifying substance use behaviour (Finfgeld, 2001). Hankin, McCaul and Heussner (2000) also recognize that increased motivation to reduce substance use during pregnancy is an important prospect for intervention; this motivation creates an opportunity for a lifetime change in substance abuse patterns.

Motivational interviewing is an empathic patient-centred counselling approach. It is done in an atmosphere of acceptance, warmth and regard for the patient, and is based on a series of open-ended questions with empathic reflections in order to help patients generate their own ideas and alternatives to drug or alcohol use. The method involves exploration of a patient's feelings and a sense of ambivalence toward their substance use during pregnancy, and may meet this indecision with directed (yet open) discussion which may include weighing the pro's and con's of continuing substance use during this period (Handmaker & Wilbourne, 2001).

A study performed in a women's hospital in Boston, Massachusetts tracked the effectiveness of counselling sessions related to drinking wherein the sessions included goal setting and discussing ways to achieve those goals (Chang, Goetz, Wilkins-Haug, & Berman, 2000). Eligible participants were found by using the T-ACE screening instrument (however, reported current drinking patterns did not indicate that all participants would be at risk for producing a child with FAS or other SARN). Chang et al. (2000) conclude "specific drinking goals established for specific reasons are associated with both maintaining of abstinence and reduction of drinking in antepartum" (p. 368). The study also noted the importance of social support when modifying prenatal alcohol consumption. This is due to the high response rate by study participants regarding risk situations for alcohol consumption that included social events, celebratory occasions, a family history of alcohol misuse, and a partner's use of alcohol (Chang et al., 2000).

According to Yahne and Miller (1999, as cited in Roberts & Nanson, 2000), successful interventions include the following elements (which can be identified by the acronym FRAMES):

- Feedback: effective, but brief interventions provide clients with personal feedback regarding their individual status.
- Responsibility: effective brief interventions emphasize personal responsibility for change and the individual's freedom of choice.
- Advice: effective brief counselling that includes a clear recommendation on the need for change, in a supportive rather than authoritarian manner.
- Menu: a menu of different strategies for change is offered, providing options from which clients may choose what seems sensible to them.
- Empathy: emphasis is placed on an empathetic, reflective, warm and supportive practitioner style.
- Self-efficacy: effective brief interventions reinforce self-efficacy, i.e. the client's expectation that she can change. (Roberts & Nanson, 2000, p.25)

Barriers and Outreach

Women who wish to enter substance abuse treatment programs often encounter barriers. Some of these include feelings of stigmatization, denial by women and by their friends and families, and a lack of gender-specific treatment services (Finkelstein, 1994; Tait, 2000), or fear of losing custody of children or not having childcare or a safe place for their children (Tait, 2000; Comfort & Kaltenbach, 1993 & Gehshan, 1993 as cited in Corse et al, 1994). Outreach work can mitigate some of these barriers and can help facilitate referrals and connections to numerous available services that a women may need. Outreach includes activities in contacting, educating, and providing services or advice to women who may be at risk for bearing a child with SARSN. Outreach can be done by agencies and groups, such as transition houses, community centres, workplaces, churches, schools, correctional settings, which are in contact with women of child-bearing age, and are in the position to present harm reduction messages with concern for the health and well-being of the mother and child (Roberts & Nanson, 2000). May (1995) suggests providing training on ARBD for servers of alcohol might also prove beneficial as many regular drinkers often have strong and lasting relationships with their servers. When outreach is coupled

with screening measures for substances, secondary prevention activities may include, training community workers and health care providers, promoting healthy community development, and creating linkages with other programs (FAS/FAE Technical Working Group, 1997).

Specifics about methods for effective outreach proved difficult to ascertain, however, there is general consensus within the literature that outreach activities are important as many women who use substances do not seek prenatal care until late in pregnancy (Hankin et al., 1993 as cited in Hankin et al., 2000; Roberts & Nanson, 2000; Tait, 2000). A reoccurring theme that presents itself suggests that services (including outreach) are most effective if they are pragmatic in the context of women's lives (Tait, 2000; Poole, 2000). For example, participants in the evaluation report of the Sheway project (a multi-agency, multidisciplinary project for high-risk pregnant and parenting women in Vancouver's downtown eastside⁸) noted that they were attracted to Sheway because of services such as free food, the borrowing of toys for their children, and the use of one of the worker's sewing machine (Poole, 2000).

Secondary Prevention: Conclusions and Recommendations

Although SARSN related secondary prevention is primarily directed toward women at risk, a community-based approach continues to be significant. While a majority of attention is associated with women at risk for bearing a child with a substance abuse related special need, it is important to keep in mind the root issues of substance use and misuse, and the role an entire population or community can play in mitigating the effects of substance use and misuse. These approaches include providing coordinated and comprehensive services, and understanding drug and alcohol use as a public health issue (May, 1995).

Specific actions relating to secondary prevention concerning substance abuse related special needs should begin by increasing the incidence of early recognition of substance use during pregnancy. This would require non-confrontational and consistent screening for substance use for all women when they first seek prenatal care or education. Interventions for substance use need

not always be extensive, even distributing simple information sheets has been shown to help. Outreach should attract women to services by mitigating barriers and offering practical assistance and support.

Based on the findings of reviewed literature, the following are a list of recommendations for secondary prevention.

- Recognize the public health aspects of alcohol and drug use, and encourage community responsibility for substance abuse related special needs.
- Routine screening, followed up by brief interventions or motivational interviewing.
- Offering practical services (such as food) at outreach services in order to attract women to attain prenatal care.
- Service providers should be upfront with their policies and obligations regarding social services and child apprehension in order to address this particular barrier and fear that many women feel about seeking services.

Tertiary Prevention

Tertiary prevention activities are directed towards those for whom substance abuse related special needs are already a concern (Roberts & Nanson, 2000). The aim of tertiary prevention is to minimize harm to the fetus, minimize the extent of disabilities, and to assist the mother to care for her child or children with substance abuse related special needs effectively⁹ (Roberts & Nanson, 2000; May, 1995). Tertiary prevention also aims to reduce the likelihood of women having further affected pregnancies (Roberts & Nanson, 2000).

Tertiary prevention is best directed toward women who exhibit a high risk of having a child with substance abuse related special needs. One indicator of a woman who may be considered 'high

⁸ Vancouver's downtown eastside is notorious for its poverty and high rates of drug use.

⁹ Best practices for parenting and intervention for children and adolescents with special needs resulting from substance abuse will not be discussed in this report. However, a report outlining best practices for children and adolescents who have been born with a special need resulting from maternal substance abuse will be completed in 2004 by the Centre of Excellence for Children and Adolescents with Special Needs: UNBC Task Force on Substance Abuse.

risk' is one who has previously given birth to a child with FAS, ARBD, or other substance abuse related special needs (May, 1995; Roberts & Nanson, 2000). Studies have shown that "women who have given birth to one FAS child and who continue to drink are at risk of having subsequent children that are progressively more severely affected (Jacobson, et al., 1998; Astley et al., 2000; Abel and Hannigan, 1995)" (Roberts & Nanson, 2000, p. 28). Other considerations of high-risk women include women of childbearing age who drink or use substances heavily, and have mental health problems and/or a history of physical or sexual abuse (Roberts & Nanson, 2000).

The majority of the literature on tertiary prevention methods is centred on substance abuse treatment. This paper understands the term 'treatment' broadly, including a range of services from assessment, diagnosis, counselling, medical services, psychiatric services, psychological services, social services, to follow-up for persons with alcohol and other drug related problems (definition influenced by Tait, 2000). For tertiary prevention, treatment programs may centre on women who are already pregnant, or other high-risk women who may become pregnant.

The following discussion of tertiary prevention and treatment programs will consist of best practices for non-pregnant and pregnant women and substance abuse treatment delivered by means of residential treatment, out-patient services, or through general pre and postnatal care programs. The discussion of best practices will be divided into three categories: 1) systemic issues that need to be addressed at the community and society level, 2) program approaches through treatment philosophies, and 3) activities of staff, service providers, and programs.

Systemic Issues

Treatment for women's substance abuse is a complex problem surrounded by multiple individual, interpersonal, familial, and societal issues (Finkelstein, 1994). Socio-economic issues such as poverty, housing, and lack of supports for single mothers are often of paramount importance. While an attempt is often made to address these issues through individual treatment, to substantially reduce the incidence of alcohol and drug abuse of women of childbearing age, we

must look deeper than the organizational level (Finkelstein, 1994). Social changes, such as housing, health care, employment, child care, children's services, family supports, legal rights, and the sexual division of labour in the family, must be addressed by society in order to ensure the most effective prevention of substance use by women (Finkelstein, 1994).

Traditional treatment programs have been designed with men as the intended population (LaFave & Desportes Echols, 1999; Finkelstein, 1994). These programs have thus failed to meet many specific needs of women entering treatment, such as a need for childcare and maintaining a woman's family and social relationships. The root of this phenomenon traces back to early, male-biased developmental theories that cast women as "inadequate, inferior, masochistic, incomplete, an aside, or non-existent (Freud, 1924, 1925, 1931, 1932; Piaget, 1965; Kohlberg, 1958, 1981)" (Morelli, Fong & Oliveira, 2001). Subsequent theories of women's psychological development have allowed treatment programs to tailor themselves to the needs and issues central to women. The relational model of women's development, established in the work of Jean Baker Miller (1976) asserts that "women's primary motivation throughout life is establishing a basic sense of connection to others. Women's sense of self and self-worth is established through connections, a feeling of mutual presence and joining in relational process, and is based on empathy and mutuality in relationships" (Morelli et al., 2001, p. 267). Morelli et al. state: "from a women-centred development perspective, there are five patterns of relational disconnection that may foster substance abuse and increase risks of relapse in women" (2001, p. 267). These include 1) non-mutual relationships; male-female relationships historically rooted in non-mutuality and power-over the other lead over time to compulsive care taking, unrealistic expectations of motherhood, or withdrawal from real relationships; 2) effects of isolation and shaming; women may feel condemned to isolation and shame from a failure of having her experiences validated in relationships; 3) limiting relational images; the use of substances can stem from the desire of women to conform to cultural images of health, attractiveness, and success in order to be worthy of connection; 4) abuse, violation, and systemic violence experienced both in relationships and systemically through society; 5) distortion of sexuality; substance abuse is often a consequence of attempts to numb the emotional pain of sexual abuse and consequently to reduce sexual inhibition

(Covington & Surry, 1997, as cited in Morelli et al, 2001).

Program Approaches

Tertiary prevention programs that intend to reduce the likelihood of children being born with a special need attributable to substance abuse can take a variety of approaches. Available substance abuse treatment has traditionally been focused to meet the needs of men, and has centred on abstinence-based programs. As tertiary prevention efforts expand to meet the needs of pregnant and non-pregnant women, programs can concentrate on harm reduction (rather than abstinence), or can provide services centred on prenatal care (rather than on substance misuse). Culturally appropriate services, as well as services that meet the needs of women in rural areas are also being created. Likewise, women-centred programs, and programs that offer flexibility and empowerment of participants are coming forth.

Program Focus: Harm Reduction, Abstinence, or Prenatal Care?

There is no single mode of program delivery or intended outcome that would be considered optimum. "Effective and comprehensive treatment can be provided across a range of treatment modalities and settings" (Uziel-Miller & Lyons, 2000, p.363). Programs can centre on a harm reduction approach, a focus on abstinence, or can be centred on administering comprehensive prenatal care to the substance using pregnant woman.

Harm reduction views abstinence as an ideal outcome, but other goals that aim to reduce harm to the woman and her fetus or children are considered appropriate (Finfgeld, 2001). The focus of the Sheway project in Vancouver's downtown eastside is on harm reduction. Here, counselling on substance use and misuse is only one of many optional and voluntary services offered. Sheway is a multi-component agency that along, with substance use counselling, offers pre and post natal medical services, advocacy and support for housing, parenting, custody and access, and other legal issues; support for reducing exposure to violence and building supportive relationships, HIV, Hepatitis C, and other sexually transmitted diseases; nutritional support; healthy babies and infant and child development; and building supportive networks (Poole, 2000; Garm, 1999).

Characteristics of harm reduction include the promotion of “any changes that a person feels capable of making in the ‘right direction’ (Marlatt, 1998, p.55) and personal choice and responsibility (Larimer et al., 1998). Harm reduction services... meet clients ‘where they are’ (Marlatt, 1998, p. 55)” (Finfgeld, 2001, p. 724). One example of harm reduction is exemplified in the following statement made by a woman who made improvements to her health, but continued drinking a litre of wine each day:

I’m nibbling away at my bad habits. I have a bowl of raw veggies that I make sure I consume during the day.... Also, every evening we walk down to the lake and go walking at the lake for about a leisurely 45 minutes to an hour. I try to drink lots of water. I don’t smoke. I limit my caffeine, and I don’t normally eat food that has added chemicals or preservatives. (Bolla, 1996, p.93 as cited in Finfgeld, 2001, p. 730)

Tertiary prevention measures with a focus on prenatal care have also been demonstrated as effective in preventing the occurrence of substance abuse related special needs. Programs with an emphasis on prenatal care, rather than substance use abstinence or reduction, have shown improvements in pregnancy outcome and parenting (Uziel-Miller & Lyons, 2000). Burkett, Gomez-Marín, and Martínez (1998) found better birth outcomes among substance users who received ‘comprehensive care’, or a combination of prenatal care and drug rehabilitation, as compared with prenatal care alone. Not all women will be ready for substance abuse cessation and Hinchliffe, Abrahams, and Whittman (1991) acknowledge that the family physician is in a good place to improve the health of the mother and fetus by the management of concurrent medical problems, such as malnutrition and infection. While available literatures reviewed have a tendency to concentrate on aspects of substance abuse treatment for pregnant women, the importance of regular prenatal medical care and the establishment of needed social supports and networks is well acknowledged (Hinchliffe et al., 1991; Roberts & Nanson, 2000; Poole, 2000).

Tertiary prevention through traditional residential or outpatient substance abuse programs can also be an option for women. While some programs may not admit pregnant women who will not be able to complete the program before giving birth, this option remains viable for some women. In

the United States, Uziel-Miller, and Lyons found two 'clusters' of treatment service types that do not centre on prenatal care. These types of programs were onsite, residential programs or comprehensive outpatient programs. Both of these types are based on the 12-step model for substance abuse treatment (Uziel-Miller & Lyons, 2000). Key experts on women's substance use in Canada recommend an addiction management approach, rather than the abstinence model. These experts also note that a variety of choices should be available to women (Currie, 2001).

As women will differ in their readiness for various forms of services, ideally a continuum would exist from non-confrontational outreach services (such as nutrition programs) to abstinence-based residential treatment facilities. Many different approaches can be effective for treatment service delivery as long as the majority of women's needs are being met (Currie, 2001; Uziel-Miller & Lyons, 2000).

Women Centred

Women-centred treatment will address women's relational and developmental needs. Caution is needed when dealing with the concept of 'co-dependence', a concept that is often found in traditional, male-centred treatment (Creamer & McMurtrie, 1998). Finkelstein (1994) observes that women-centred treatment should focus on women's relationships as daughters, partners, and mothers. Women will often have developed their feelings, experiences, and exposure to substances in their relationships as daughters and partners. As mothers, women address feelings of inadequacy and guilt. Relational matters of violence, incest, and sexual abuse are also of primary importance and often are central contributors to women's substance abuse (Finkelstein, 1994).

Key findings of Currie's study (2001) also support a women-centred approach. Participants note that the women centred approach does not always entail a women-only environment or gender segregated treatment, but that treatment should incorporate some women-only components that will allow women to explore issues in a women-only environment (Currie, 2001).

Flexibility and a Focus on Strengths

Program approaches that offer flexibility, a focus on women's strengths, and empowerment into the program's planning and structure are key factors for successful treatment (Creamer & McMurtrie, 1998; Currie, 2001). A flexible structure, where women are able to "move in and out as required" (Currie, 2001, p. 59) is identified as a key aspect of client retention. This ease of access to services is particularly important to women who are currently pregnant and/or have concurrent substance use and mental health disorders (Grella, 1996 as cited in Currie, 2001). The concept of empowerment has been identified as a critical element associated with the recovery of the individual and with treatment retention (Drabble, 1996 & Strantz & Welch, 1995, as cited in Currie, 2001).

Culturally Appropriate

The diversity of Aboriginal cultures and ethnicities in Canada¹⁰ could not be appropriately addressed in this report. However, there are common trends to the specific issues and barriers regarding substance use treatment and recovery that are encountered by Aboriginal and ethno-cultural minority women. Literature on the topic of culturally appropriate treatment has generated some common themes and approaches, for instance the observation that

being culturally sensitive involves having an understanding and appreciation of the consequences of European contact on Aboriginal people. With loss of language and externally imposed denial of ancestry came a sense of confusion and loss of self-esteem, which resulted in alcoholism and traditions not being passed down. . . . Culturally appropriate care is tangible, action oriented, and respectful of diverse cultural practices. It includes the physical structure and environment, how a program or service is delivered and by whom, and it provides choices relative to how each person experiences culture. (Vancouver/Richmond Health Board, 1999, p. 13)

Key informants in Currie's study (2001) related that access barriers (and effective treatment) for substance use include cultural differences, a lack of Aboriginal staff and Aboriginal specific

programming, and a lack of Aboriginal gender specific programming. These barriers exist in addition to barriers which hamper substance use treatment as experienced by women more generally. Lundquist and Jackson (2000) speak of the different experience of addicted Aboriginal women who become pregnant, and other women in this situation.

An Aboriginal woman's present reality is shaped by what she carries on her back. She hauls not only the legacy of colonialism, racism, marginalization and historic oppression but also the sexism apparent in her own community and the larger world around her. In the end she is seen by others as 'the lowest of the low,' less worthy than others, even than other addicts, and even than other women addicts. (Lundquist & Jackson, 2000, p. 113).

Participants in a study of rural and remote service needs for substance abuse related special needs observe that awareness is needed regarding First Nations' existing culture and problem solving techniques (de Leeuw, Fiske, & Greenwood, 2002). Participants in the study state that drug and alcohol counsellors need to understand that western ways of problem solving will not work with a First Nation's population.

The FAS/FAE Technical Working Group (1997) emphasizes the need to meet the social, cultural and language needs within First Nations and Inuit communities. A significant aspect of the paper acknowledges that root causes of substance use need a community approach to prevention. The report encourages a holistic approach, including, respect, caring, and compassion. The report also recommends traditional teaching and traditional parenting techniques and promotes cultural sensitivity, user friendliness, and First Nations and Inuit language translation when appropriate.

Gitksan communities of northern British Columbia have also recognized the importance of enhancing responses to substance use and substance abuse related special needs at the community level (de Leeuw & Greenwood, 2003). Participants in a 2003 project assert the importance of building local capacity and strength and creating locally driven initiatives and solutions connected to, and using, existing cultural systems. In this case, the Gitksan have the

¹⁰ To more fully explore the diversity of these cultures and ethnicities in Canada, see for instance Alfred (1999) and Adams (1999).

Wilp (house) system of kinship and child rearing, and can offer a strong system of community and family connections. Morelli et al. (2001) (while exploring culturally competent substance abuse treatment for Asian/Pacific Islander women) also noted the use of traditional healing practices and natural, community-based support systems as one of the key factors that helped treatment success. Participants of the Gitksan communities also recommend education through an existing knowledge base of Elders and other local experts. These concepts of investing in local and traditional social and political strengths are intricately tied with a need for the recognition of the Aboriginal right to self-determination (de Leeuw & Greenwood, 2003; Lundquist & Jackson, 2000).

The Southcentral Foundation -- Dena A Coy Residential Treatment program in Alaska, approaches cultural sensitivity with the idea that each woman is unique (Namyniuk, Brems, & Clarson, 1996). The foundation attempts to understand each woman's unique background and history and cautions about stereotypic assumptions about cultural groups. They explore with each woman "how she perceives her culture, what her cultural role models are like, and how traditional she is and has been in her lifestyle" (Namyniuk et al., 1996, p.290). Their philosophy of openly accepting difference has also guided them to identify and use strengths that emanate from each client's personality and background (Namyniuk, et al., 1996).

A review of Aboriginal participants in Tait's study in Manitoba (2000) found that some participants favoured the traditional teachings taught by an Aboriginal person, and found it meaningful to have treatment centres located on Aboriginal land. Several participants who self-identified as Aboriginal, but did not consider themselves to be 'traditional', noted that they were anxious about the idea of traditional teachings or treatment. Notably, however, one participant who did not identify as being traditional entered a traditional treatment program and was appreciative of the opportunity to learn about her heritage and it improved her treatment experience. The fact that not all programs for Aboriginals are gender sensitive was also an issue. Some participants identified more with their Nation or as Métis than with the concept of a pan-Aboriginal culture. The responses reveal the differences in women's identity that can stem from the diversity of Aboriginal traditional cultures and a woman's relationship to that culture.

Women in Rural Areas

Nearly nine million Canadians, or 30% of Canada's population live in rural and remote areas of the country (Health Canada, n.d.). Despite this, rural issues in substance use prevention and treatment have been largely ignored in the available research. Living in rural regions will affect the availability, accessibility, and quality for services for substance abuse related special needs (de Leeuw et al., 2002). Economic, cultural, geographic, and political factors all interplay to shape service delivery in northern and rural regions (de Leeuw et al., 2002). Some of the specific factors influencing substance abuse related special needs and rural service delivery include a lack of women centred services, a limited number of services for referral, a sense of stigma and lack of anonymity associated with small towns (Currie, 2001). A lack of local services can be compounded by the poverty rural women often face; this lack of funds will seriously impede a woman's ability to access services in another town due to the cost of transportation and lodging (Currie, 2001). Despite its seemingly straightforward solution, transportation continually emerges as a significant barrier to accessing needed services (de Leeuw et al., 2002; Tait, 2000). When services are available in smaller towns, their effectiveness is often limited by a lack of consistent funding, and continuous service provider turnaround (de Leeuw et al., 2002; de Leeuw & Greenwood, 2003).

For these reasons, several of the recommendations for best practices for prevention of substance abuse related special needs will be beyond the capacity of many rural towns. For example, the availability of numerous different options for treatment and programs is recommended, but this may be beyond the capacity of a small town. However, rural and small towns often possess certain qualities that can be built upon for SARSN prevention. Gitxsan communities stressed the importance of a locally driven approach (de Leeuw & Greenwood, 2003). Networks, referrals, and community support can often be strong in smaller towns. Rural towns can build on their multiple strengths to provide a community-based approach to the prevention of substance abuse related special needs (de Leeuw & Greenwood, 2003).

Specific Activities

While program approaches and philosophies will have a large impact on the types and methods of services provided, specific activities can go a long way in improving substance abuse treatment for women. Barriers to treatment often include a lack of services and resources, such as a lack of child care or transportation. In other instances, the urgency of immediate needs, such as food and shelter prevail over acquiring substance use treatment (Haller, Knisley, Elswick, Dawson, & Schnoll, 1997).

In general, specific services and activities should be offered in a coordinated and continuous fashion (Weisdorf, Parran, Graham, & Snyder, 1999; Hinchliffe et al., 1991). Comprehensive care, or as many services as possible being offered under one roof, will also assist women who may be pregnant to meet their multiple needs (Currie, 2001; Finkelstein, 1994). This concept is also described as 'one-stop-shopping' and is commonly found to improve treatment retention and outcomes (Curet & Hsi, 2002). Breaking the Cycle, a comprehensive program for at risk children and their families in downtown Toronto, makes use of the one-stop-shop model with the recognition that this model is important to mothers who may not otherwise seek a range of individual services (Breaking the Cycle, n.d.).

Weisdorf et al. (1999) found an improvement in treatment retention of cocaine dependent pregnant women after the implementation of a program that improved and increased services such as counsellor continuity, treatment coordination and group continuity, treatment specific to women and pregnancy, parenting groups, child care options, and outpatient services.

Namyniuk et al. (1997) has found success with Dena A Coy, a pre-maternal treatment program for Aboriginal women in Alaska. This program is a residential treatment facility with the goal of sobriety. It is a comprehensive program that includes gender, culture and social issues, but also emphasizes the importance of specific activities such as education and vocational training, outreach assessment, and continued program involvement after treatment.

Peer counselling is also a recommended aspect of treatment (Creamer & McMurtrie, 1998; Sherman, Sanders & Yearde, 1998). The efficacy of this form of treatment comes from improvements in the recovering women's perception of self-efficacy and beliefs about capabilities to exercise control over events in their lives (Bandura, 1989 as cited in Sherman et al., 1998). Pregnant women may be entering treatment at an earlier stage of readiness (the pre-contemplation, contemplation, or preparation stage) due to external pressures such as fear of losing custody of their child. Therefore, peer counselling can improve treatment effectiveness by providing positive role models who will increase the woman-in-treatment's sense of self-efficacy, a sense that they 'can do'. A positive relationship with a peer counsellor with whom the woman initiating treatment can identify can enable a sense of self-efficacy. A belief in one's own abilities can be accomplished through vicarious experiences, imaginal experiences, and/or verbal persuasion with the peer counsellor (Bandura, 1977 as cited in Sherman et al., 1998).

Specific activities and services that can be undertaken by programs and program staff, along with the approaches and philosophies of programs that address the needs of pregnant and not yet pregnant women of high risk, offer substantial opportunity to reduce the incidence of children with substance abuse related special needs.

Tertiary Prevention: Conclusions and Recommendations

Women's needs and concerns regarding substance use have until recently been ignored in research and service provision (Finkelstein, 1994). The situation is, however, quickly improving with an increase in programs designed specifically around the needs of women and their families, such as Breaking the Cycle and the Sheway Project. While women continue to experience multiple barriers to receiving services regarding substance use and pregnancy, during the past ten years there has been a dramatic increase in available literature outlining the positive responses to the issues experienced by women and substance use. It is through this expansion of research, knowledge, and resulting development of programs that centre on women's and pregnant women's needs regarding substance use that we can thus decrease the likelihood of children being born

with substance abuse related special needs.

This review of tertiary prevention is able only to briefly touch on the available information. Women with mental health issues, rural women, women with HIV/AIDS and Hepatitis C, and women involved in the criminal justice system are important issues that this report could not adequately address. A more detailed and thorough overview can be found in *Best Practices: Treatment and Rehabilitation for Women with Substance Use Problems* (Currie, 2001). Alternatively, reports detailing specific aspects of tertiary prevention and substance use treatment are available. It is encouraging that findings from available literature consistently suggest the same (or similar) elements of effective and appropriate treatment. A women-centred approach that addresses women's psychological, social, and practical needs in their family, with their children, and with their own sense of self-esteem, skills, and knowledge, is a common ground for programs and services designated to address women and their substance use. Programs should be comprehensive and provide as many medical and health, child related, family, educational, practical, psychological, social, and community support services as possible, preferably under one roof (Currie, 2001). Programs may concentrate on harm reduction, providing prenatal care, or may stress abstinence. The best approach is that which most appropriately suits the needs of the woman. It is by meeting these needs that the incidence of children and adolescents with substance abuse related special needs will be decreased.

The following recommendations build on existing research regarding pregnant and non-pregnant women's substance use. These recommendations, including a harm reduction approach, are based on the findings of reviewed literatures, and are in light of existing research regarding the occurrence of physiological and developmental outcomes of children born upon being exposed to various substances in the fetus, as discussed previously.

- Programs should utilize a women centred approach and holistic approach that addresses women and their relationships and their personal healing and growth.
- Communities should ensure there are multiple levels and types of assistance for substance using pregnant women. These include accessible prenatal care and residential

and outpatient substance use treatment.

- The needs of women living in rural areas need to be articulated and included in the dialogue of women and substance use prevention.
- Services should be comprehensive, with as many services under one roof as possible.
- Services should address the practical needs of women, including childcare, transportation, and nutrition.
- Services should be flexible, respectful, and focus on harm reduction.

VI

Conclusions

The purposes of this review were to 1) identify existing research and programs concerned with substance abuse related special needs in Canada, 2) to determine best practices for service delivery, and 3) to ascertain what gaps currently exist with the research and evaluated programs.

Ample research exists on medical issues involving alcohol and cocaine use and the fetus. Missing from this research are studies that investigate the effects of other substances, including inhalants, marijuana, opiates, and other psychoactive drugs. It is, however, important to not become preoccupied with medical issues that appear in the fetus and in newborns at the expense of ignoring behavioural, cognitive and developmental issues that may surface later as the child matures. In addition it is important that research recognizes factors that also influence children's development, including poverty, nutrition, and environment. Therefore, while medical research may be lacking in certain areas, there is adequate information on the dynamics that positively influence childhood development for infants and children considered 'at risk' to proceed with their implementation.

The recent inclusion of research findings and discussions concerned with the needs of women with substance use issues is encouraging. As women-centred approaches and programs (with provisions for childcare and other practical needs) begin to materialize, it would be beneficial to modify those approaches into ways that women in smaller and rural communities could benefit. Model programs need to be developed for this large but often forgotten population. In addition, the further development of programs that address the barriers, needs, gender, and culture for Aboriginal and ethnic minority women are needed.

It is also important to learn from, and celebrate, successes. Consistent program evaluations that would enable policy makers and other organizations to benefit from what these organizations have learned may prove useful in ascertaining and developing the structure of future initiatives.

There is expanding awareness of substance use and substance abuse related special needs as a societal and public health issues. Systemic issues such as poverty, lack of employment, and experiences of violence and sexual abuse, are often acknowledged but rarely integrated or recognized within methods aimed at preventing women's substance abuse and the resulting children and adolescents with substance abuse related special needs (an exception can be found in the work of May, 1995, Finkelstein, 1994 and Leischner, 2001). While it is valuable that in the last 10-20 years prevention discourse has moved to include the needs of women into discussions and writings regarding substance use and related special needs, prevention nonetheless continues to frame women with respect to their current relationship with drugs and alcohol. Women continue to be first and foremost defined as the product of their use of substances, much like medical case studies define patients with respect to their disease. Thus, the process of medicalization of substance use continues. As outlined in this paper, substance use is more effectively approached as a social issue. Prevention (not just treatment) of substance use needs to address the social issues of poverty, housing, violence, sexual abuse, and women's sense of powerlessness at the community and society level. Only by addressing these issues can we adequately begin to address intervention issues for children and adolescents with special needs associated with substance abuse.

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