

Girls, Women and Substance Use

prepared by

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INTRODUCTION

There is considerable evidence to support women-specific approaches to prevention, treatment, harm reduction, research and policy on substance use and addiction. There is a clear need to understand the differences in substance use between males and females, as well as among diverse groups of women and girls. The BC Centre of Excellence for Women's Health (BCCEWH) and the Canadian Centre on Substance Abuse (CCSA) have developed this information resource together to summarize the ways in which substance use and addiction differ for girls and women, and the implications of those differences for policy, research, systems and services. With the signing of a Memorandum of Agreement in 2004, BCCEWH and CCSA have formalized an opportunity to enhance their respective roles in promoting health and reducing the harms for girls and women associated with their use of alcohol, tobacco and other drugs.

What patterns of use are common for girls and women?

Alcohol, tobacco and other mood-altering drugs touch the lives of most girls and women, whether as users themselves, when affected by family members' or their partner's use, or as mothers and models for children. Levels and types of use by women vary according to age, ethnicity, income, ability and occupational/mothering roles, and other important determinants. It is widely acknowledged that women who are heavy substance users rarely use a single substance [1-3]. And it is recognized that not all substances are equally harmful and that associated factors such as combinations of use, levels of exposure, individual health status and related risk behaviours contribute to differing outcomes. However, for ease of understanding, substances are addressed individually in this information sheet. As well, it is acknowledged that men are not a benchmark against which to compare women; however, some similarities are pointed out here as many readers may be familiar with substance use and addiction among males in Canada.

Alcohol

Since the 1970s, studies have found that Canadian women drinkers consume less alcohol and drink less frequently than men who drink. For example, in 2004 more women (74.2%) than men (53.4%) reported drinking no more than one or two standard drinks on a single occasion in the past year [4]. However, alcohol is the most common substance used by women and its use has been on the rise over the past decade [4-6] (see Table 1). Recent studies with international populations also show the gender gap is closing for prevalence of alcohol use [7-9].

Table 1—Percentage of females and males who report past-year drinking, by sex, aged 15+, Canada, NPHS* 1994-95, 1998-99, CAS 2004**

| | 1994-95 | 1998-99 | 2004 |
|---------------|---------|---------|------|
| Female | 71.5 | 74.0 | 76.8 |
| Male | 79.8 | 82.2 | 82.0 |

*NPHS=National Population Health Survey

**CAS=Canadian Addiction Survey

Most Canadian women and men drink in moderation. However, a marked gender gap is evident in self-reports of *heavy* drinking, defined as four drinks or more on a single occasion for females, and five drinks or more on a single occasion for males. In 2004, a greater proportion of males than females reported that they drank heavily on a monthly basis (33.9% vs. 17.0%) [4]. In addition, for the past year, twice as many males (30.2%) as females (15.1%) reported drinking that exceeded the low-risk guidelines for alcohol consumption [4]. These guidelines recommend that men and women limit weekly alcohol intake to no more than 14 and 9 standard drinks, respectively.

In the case of perceived *harm associated with substance use* cited by women and men, the gender differences are not so marked. In 2004, 7.1% of women and 10.5% of men reported that they experienced at least one harm during the past year because of their drinking, and 32.6% of women and 32.9% of men reported harm because of someone else's drinking [4].

Recent studies of drinking among university students also indicate convergence in prevalence of use, but smaller gender differences in levels and patterns of alcohol use. A recent survey of Canadian university students found that 87.5% of female and 85.4% of male students used alcohol in the past 12 months [10]. Nearly half (41.1%) of women reported harmful drinking in the past 12 months and 29.3% reported dependent drinking. The rates are just slightly higher for men (see Table 2). Harmful drinking indicates the percentage reporting at least one of four indicators (felt guilty after drinking, been unable to remember events after drinking, involved in a drinking-related injury, others have suggested reduction in drinking). Dependent drinking indicates the percentage reporting at least one of three indicators (been unable to stop drinking, failed to perform expected activities, needed a morning drink). Further, more than half (56.1%) of female students reported consuming five or more drinks on a single occasion at least once during the year, and 25.2% reported consuming eight or more drinks on a single occasion. Since low-risk drinking guidelines for women recommend no more than two or three drinks on one occasion, and even fewer in certain circumstances (for example when taking other mood-altering substances) [11], these high rates of heavy drinking among women students are of concern.

Table 2—Percentage of university students who report past-year harmful and dependent drinking, by sex, Canada, CCS* 1998

| | Harmful drinking | Dependent drinking |
|---------------|------------------|--------------------|
| Female | 41.1 | 29.3 |
| Male | 45.2 | 31.8 |

*CCS=Canadian Campus Survey

Further indication of the increasing comparability in alcohol use between females and males in Canada can be found in studies of school-aged children and youth. Several provincial studies are conducted at the middle- and high-school levels in Canada, with the longest ongoing study being the *Ontario Student Drug Use Survey*. It reported in 2003 that males are

more likely to drink than females (68.3% vs. 64.3%) and that the rates of binge drinking are significantly higher among males (29.4%) than among females (23.8%) [12]. However, reported drunkenness was not found to be significantly different among males and females (25.8% vs. 22.2%) [12].

Further, the 2001-02 *Health Behaviour in School-Aged Children* survey found that 22% of females in Grade 10 in Canada, 12% of girls in Grade 8, and 2% of girls in Grade 6 reported drinking any alcoholic beverage once a week or more [13]. Similar numbers of girls and boys reported that they have had so much alcohol to drink on at least one occasion that they were “really drunk” [13] (see Table 3). There is little information available about youth who are out of the mainstream (out of school, or street-involved), but indications are that the percentage of these females drinking alcohol is higher, and their pattern of use is riskier than their high school counterparts [14]. Young women who are homeless/living on the street are at particular risk for a range of additional harms related to their heavy substance use and other risk behaviours [15].

Table 3—Percentage of school-aged children who report having been really drunk on at least one occasion, by sex, by grade, Canada, HBSC* 2001-02

| | Grade 6 | Grade 8 | Grade 10 |
|---------------|---------|---------|----------|
| Female | 8.0 | 29.0 | 18.0 |
| Male | 12.0 | 29.0 | 19.0 |

*HBSC=Health Behaviour in School-Aged Children survey

Tobacco

According to the 2004 Canadian Tobacco Use Monitoring Survey [16], approximately 22% of males (aged 15 and older) in Canada were current smokers, while 17% of women were smokers. In all age groups, men also smoke more cigarettes a day on average (16.4 cigarettes) than women (13.8). However, for youth aged 15-19, 18% of girls and 19% of boys were current smokers. For teen girls, this is the lowest annual smoking rate since monitoring began in 1965.

However, a higher percentage of girls 15-17 (15%) compared with boys (13%) were current smokers. In addition, 18-19-year-old females smoke more cigarettes a day on average (13.8) than males of the same age (11.6). Although rates have decreased since 1999 for both males and females, boys 15-17 are still more likely to have never smoked than girls (85% of boys have never smoked versus 82% of girls). It is important to point out here that the historic trend has been that males have consistently smoked more than females at all ages.

The most recent provincial student drug use survey, *Alcohol and Other Drug Use by Manitoba Students* [17], similarly reported that rates of daily smoking among females were higher than among males. In each grade beyond Grade 8, approximately 3% more females than males reported daily smoking. However, when examining smoking behaviour within the past year, the difference is greater: 38% of female high school students and 29% of male students.

As well as age differences, there exist cultural differences in tobacco use. To illustrate, the preliminary findings of the 2002-03 *First Nations Regional Longitudinal Health Survey* [18] revealed that the proportion of First Nations people over 20 years of age who smoke on occasion or regularly is more than double the Canadian average. A study of high school students in British Columbia [19] found 45.5% of Aboriginal youth were smokers. As with girls in general, levels of use were higher for Aboriginal girls (48.5%) than for Aboriginal boys (42.7%). Moreover, a greater proportion of Aboriginal females than males had initiated smoking by age 11 [20]. There is a need for greater understanding about other cultural or ethnic groups in Canada.

Mood-altering prescription drugs

For more than 30 years, women’s health activists have expressed concern about the over-prescription of benzodiazepines to women and the serious addictive and other health consequences of over use [21]. Gordon [22] has described benzodiazepines as the most widely prescribed psychoactive drug in the world, with recent statistics indicating that one in 10 Canadians reports using a benzodiazepine at least

once a year and continues to use them for at least a year. A recent study in British Columbia showed that 9% of the population received at least one prescription for a benzodiazepine in 2002, and despite potential for major harm and scant evidence of clinically meaningful benefit, benzodiazepine use increased between 1996 and 2002 [23]. In addition, this study showed a considerable gender gap, as 7.1% of males were prescribed a benzodiazepine, compared with 12.2% of females. This gendered relationship to benzodiazepine use holds for all ages, with the highest prevalence rates found among elderly women [21, 23-25].

With women and older adults being the two groups most likely to be prescribed benzodiazepines, they are also most vulnerable to adverse effects. Not only are women nearly twice as likely as men to be prescribed benzodiazepines, but they are often prescribed to help them cope with difficult life circumstances—such as stress from work or home life, grief, acute or chronic illness, physical pain, or adjustment to a major life change—rather than to relieve severe clinical symptoms [26]. Aboriginal women are also prescribed benzodiazepines at a much higher rate than Aboriginal men. A study of prescription drug use among First Nations people in western Canada found that two-thirds (63.3%) of prescriptions for benzodiazepines were prescribed to women and the mean age for recipients was 41.1 years [27].

The disproportionate use of medications among women is also documented for other prescription and non-prescription drugs [25, 28]. According to Statistics Canada, women report higher rates of use in all categories, including painkillers, sleeping pills, tranquilizers, anti-depressants, and diet pills [5]. In a review of national survey data from 1994-95 to 1998-99, the Canadian Community Epidemiology Network on Drug Use reported that females had a consistently higher use of select prescription and non-prescription drugs than males in the past month [6] (see Table 4). The most substantial increase was in the use of anti-depressants. Males, however, reported a decrease in use over the same time period, with the exception of a very slight increase in use of opioid analgesics and stability in the use of diet pills. Further, analysis of the

2000 *Canadian Community Health Survey* for Ontario for those 12 and older indicated consistently higher rates of use by females than males of these same select prescription and non-prescription drugs [29].

Table 4—Percentage of females and males who report past-year non-prescription and prescription drug use, by sex, aged 15+, Canada, NPHS* 1994-95, 1996-97, 1998-99

| | 1994-95 | 1996-97 | 1998-99 |
|--------------------------|---------|---------|---------|
| Tranquillizers | | | |
| Female | 3.4 | 3.4 | 3.5 |
| Male | 1.8 | 2.0 | 1.9 |
| Diet pills | | | |
| Female | 0.3 | 0.7 | 0.7 |
| Male | 0.1 | 0.3 | 0.1 |
| Anti-depressants | | | |
| Female | 3.8 | 4.7 | 5.9 |
| Male | 1.8 | 2.5 | 2.5 |
| Opioid analgesics | | | |
| Female | 4.9*** | 5.4*** | 5.8** |
| Male | 3.6*** | 4.1*** | 4.2** |
| Sleeping pills | | | |
| Female | 3.6 | 4.0 | 4.8 |
| Male | 1.9 | 2.9 | 2.7 |

*NPHS=National Population Health Survey

**Codeine only

***Codeine, Demerol or morphine

Similar findings are identified among adolescent girls and boys in the 2003 *Ontario Student Drug Use Survey*: 6.7% of females from Grades 7 to 12 reported using stimulants (e.g., diet pills) in the past year compared with 4.7% of males [12]. The 2002 *Nova Scotia Student Drug Use Survey* found that rates of non-medical use of either amphetamines or methylphenidate (Ritalin) at least once in the year prior to the survey were nearly equal among female (12.1%) and male (13.6%) students in Grades 7, 9, 10 and 12 [30]. And the 2005 Manitoba student survey found a much higher reported rate of use of other people's prescriptions in the past year among females (6.4%) than among males (3.7%) from Grades 7 to 12 [17] (see Table 5).

Table 5—Percentage of females and males who report past-year use of others’ prescriptions, by sex, by grade, Manitoba, AODUMS* 2004

| | Grade 7 | Grade 8 | Grade 9 | Grade 10 | Grade 11 | Grade 12 |
|---------------|---------|---------|---------|----------|----------|----------|
| Female | 1.9 | 6.1 | 9.0 | 7.0 | 6.9 | 7.7 |
| Male | 2.1 | 2.4 | 2.9 | 4.5 | 5.1 | 5.4 |

*AODUMS=Alcohol and Other Drug Use by Manitoba Students survey

Illicit drugs

Overall, men are nearly twice as likely as women to report use of any illicit drug. In 2004, more men than women reported lifetime use of hallucinogens, cocaine, speed, ecstasy, inhalants, drugs by injection and heroin [4] (see Table 6). Recent data indicate increasing self-reports by both women and men in the use of cannabis, although a significant gender gap remains. In the 1994 *Canada’s Alcohol and Other Drugs Survey*, 10.0% of men and 4.9% of women reported using cannabis in the past year [5] while in the 2004 *Canadian Addiction Survey*, this increased to 18.2% of men and 10.2% of women [4].

Table 6—Percentage of females and males reporting use of illicit drugs during their lifetime, by sex, aged 15+, Canada, CAS* 2004

| | Female | Male |
|---------------|--------|------|
| Hallucinogens | 7.1 | 16.0 |
| Cocaine | 7.3 | 14.1 |
| Speed | 4.1 | 8.7 |
| Ecstasy | 3.0 | 5.2 |
| Inhalants | 0.7 | 1.9 |
| Injection Use | 0.6 | 1.6 |
| Heroin | 0.5 | 1.3 |

*CAS=Canadian Addiction Survey

While there are limited data on methamphetamine use in Canada (also known as crystal meth, among other names), anecdotal evidence reported at the 2005 Western Canadian Summit on Methamphetamine pointed to an increase in prevalence as evidenced by hospital admissions, police contacts, and the number of individuals seeking treatment [31]. Recent data

from British Columbia indicated that similar numbers of men (53%) and women (47%) accessed treatment for methamphetamine use. The 2004 CAS found that 0.7% of females and 1.0% of males reported past-year use of speed (amphetamines) [4]. The Ontario and Manitoba student drug use surveys similarly reported low and comparable rates of use within the past year among males and females [12, 17] (see Table 7).

Table 7—Percentage of school-aged youth who report past-year use of methamphetamines, by sex, Ontario and Manitoba, OSDUS* 2003, AODUMS 2004**

| | Ontario | Manitoba |
|--------|---------|----------|
| Female | 2.9 | 2.5 |
| Male | 3.8 | 1.9 |

*OSDUS=Ontario Student Drug Use Survey

**AODUMS=Alcohol and Other Drug Use by Manitoba Students survey

There is evidence to indicate that the gender gap in other related aspects of illicit substance use is narrowing as well. Concerns about this have been expressed internationally (e.g., Australia, United States, countries in the European Union) [32, 33]. In the 2004 CAS, one or more harms from their own cannabis use in the past year was reported by 16.0% of females and 18.4% of males 15 and older [4].

It is estimated that approximately one-quarter to one-third of injection drug users (IDUs) in Canada are women [34]. IDU is identified as a major risk factor for HIV infection in women. The proportion of positive HIV tests attributable to IDU among women 15 and older in Canada has varied between 33% and

48% from 1985 to 2002, with a slight decrease over time. In 2002, 37.2% of all positive HIV tests among women were attributable to IDU [35]. Among adult men in Canada, the proportion of HIV-positive tests attributable to IDU remained stable at approximately 23% in 1999-2001 and decreased slightly to 20.3% in 2002 [36]. Injection drug use is a key mode of HIV transmission in the Aboriginal community, with a disproportionately higher percentage of HIV attributable to IDU among Aboriginal women than among non-Aboriginal women: between 1998 and 2003, 66.9% of HIV-positive tests among Aboriginal women were attributable to IDU [37-39]. The significant health risks for women related to illicit and injection drug use are covered in the health consequences section below.

How do social attitudes about women and girls affect their substance use?

In a review of best practices in substance use treatment in Canada, Roberts and Ogborne concluded that women experience “[a] greater stigma...attached to [their] substance abuse problem” than do men [40, p. 92]. In addition, research has demonstrated that women experience “greater resistance on the part of family and friends; [and] ...more negative consequences attached to treatment entry” [40]. The negative consequences attached to treatment entry are compounded for women by “family responsibilities, lack of child care facilities, job loss, anger from spouse, loss of friends” and other adverse impacts on women’s well-being [40].

Research and public policy related to women’s substance use have not tended to focus on the health and welfare of women themselves, but on “the dangers that drug-using women pose to their children and families, and to civil society more generally” [41]. Stigma and negative stereotypes about women’s and girls’ substance use influence the extent to which women are supported in reporting their own substance use patterns and concerns, and the rates at which women are screened for substance use problems [41-43]. As Kilbourne has clearly demonstrated in her research, advertising can also have a powerful influence on the way women view alcohol and tobacco

use, and how women’s alcohol and tobacco use is viewed by health professionals [44].

The effects of stigma are particularly important for pregnant women and mothers. Given that the stigma associated with maternal substance use likely prevents women from accessing treatment, it is difficult to conclusively determine the extent to which women use alcohol, tobacco, and other drugs during pregnancy. The most recent published data on the prevalence of women’s use of alcohol during pregnancy is the 2005 overview, *Report on Maternal and Child Health in Canada*, which states that “roughly 14% [of mothers] reported drinking alcohol (any amount) during pregnancy” [45]. Similarly, the 2000-01 *Canadian Community Health Survey* indicates that 13.7% of all women who reported using alcohol in their lifetime also consumed alcohol during their last pregnancy [29]. Pregnant women who use substances come under considerable scrutiny in Canadian society. The public discourse on pregnant women as users of alcohol, drugs and tobacco has been fundamentally judgmental, blaming and unsympathetic [46, 47]. In this context, it has been challenging to make service systems responsive to pregnant women’s needs for information, non-judgmental brief intervention, and supportive treatment [14, 48, 49].

Canadian studies on women’s use of alcohol during pregnancy, particularly in relation to Fetal Alcohol Spectrum Disorder (FASD), disproportionately focus on Aboriginal women [50]. Further, Canadian studies of FASD prevalence rates have focused on Aboriginal communities where rates of alcohol abuse and dependency are known to be high [51]. The focus on Aboriginal communities with high rates of alcohol abuse and on regions with large concentrations of Aboriginal peoples has meant that Canada lacks epidemiological data regarding other populations, making it difficult to determine whether Aboriginal women are, in fact, at greater risk than other groups.

Substance use by some women has been viewed by health professionals as more problematic than by others. This has led to disparities in screening and

access to treatment among certain groups of women. Poor women and women of colour are more frequently screened for substance use when accessing perinatal care than are middle-class and Caucasian women [43, 52, 53]. Moreover, stereotypes of Aboriginal peoples as particularly prone to alcoholism or in need of intervention for problematic substance use can act as a barrier to care for some Aboriginal women who wish to disclose or seek support for substance use issues [54]. It is important that all women who are struggling with substance use problems receive support and assistance to enhance their health and well-being.

How are the pathways to substance use unique for girls and women?

There is a distinct paucity of information in the existing literature on the pathways to substance use that may be unique to women and girls. An exception to this is found in a comprehensive analysis of the reasons why girls and young women use alcohol, tobacco and other drugs, and what puts them at risk of substance abuse. Undertaken by the National Center on Addiction and Substance Abuse (CASA) at Columbia University [55], this study identifies the following key risk factors for substance abuse as unique to and/or more serious for girls and young women:

- Greater vulnerability to the physical health impacts of substance use itself, which makes girls and women more vulnerable to addiction and other health problems associated with use.
- Key transitions such as moving from one neighbourhood to another, or moving from high school to college, are times when girls and women are at higher risk for substance misuse.
- Girls and women tend to use tobacco, alcohol or drugs to improve mood, increase confidence, reduce tension, cope with problems, lose inhibitions, enhance sex or lose weight. These emotional and relational reasons can keep them in a destructive cycle in the absence of more adaptive supports and changes.

- Sexual abuse and physical abuse, which are experienced more often by girls than by boys, are strongly related to problems with substance use. Girls who have been sexually abused are more likely to use/misuse substances, and to use them earlier, more often, and in greater quantities.

Increasingly, the international literature is supporting CASA's representation of these gendered pathways, particularly the need for a more complete understanding of the relationship between trauma and substance use [56].

Concern has been raised about recent marketing practices by alcohol producers and marketers that specifically target young people [57]. The gendered messages to young women about alcohol and tobacco are especially pernicious, linking their use to sex, self-esteem, thinness, glamour, rebellion and relationships [44].

The gendered differences in pathways to substance use and addiction are relevant across the lifespan. Vulnerability to substance use and misuse at key life transitions for women is often missed by health care professionals and prevention programming planners with their focus on prevention in youth. And violence against women, child sexual abuse, and the related lack of social support remain strong predictors of substance use and substance use problems within and beyond adolescence [58].

How do the health consequences of substance use differ for girls and women?

Women are particularly vulnerable to the physical effects of alcohol, tobacco and other drugs. Although women in general have lower levels of use and problematic use compared with men for the majority of substances, it is well documented, as described below, that they are at greater risk of developing related health problems. And given the generally high rates of use among youth for some substances and that adolescence is a time of brain and hormonal maturation, it is important to acknowledge both short- and long-term consequences of use for girls and young women.

Alcohol—Women develop alcohol-related liver disease earlier (after a shorter history of use) than men [59]. Other health risks that are higher for women who drink heavily include hypertension, osteoporosis, brain shrinkage and impairment, breast cancer, and gastric ulcers [60]. Even low-level alcohol use can disrupt normal menstrual cycles and women with alcohol problems are known to have a variety of sexual/reproductive health problems (cited by one-third of women entering treatment at the Aurora Treatment Centre in Vancouver) [61]. Drinking during adolescence and the young adult years can dramatically compromise bone health and may increase risk of osteoporosis [62]. The risk of having a child affected by Fetal Alcohol Spectrum Disorder due to heavy drinking in pregnancy is another compelling difference for women related to their alcohol use. While fewer women than men (7.1% vs. 10.5%) report that they have experienced harm in the past year because of their drinking, women have a higher chance of being harmed by others who are drinking [4].

Tobacco—Men and women share many of the same health effects from smoking, including heart disease, respiratory diseases, and a wide range of cancers. While lung cancer is the leading cause of cancer death for both men and women, the type of lung cancer differs between the sexes and it progresses more quickly for women. In 1996, Health Canada estimated that more than 45,000 people in Canada die each year from smoking. At that time about one-third of deaths attributable to smoking were of women, with female smoking-related deaths rising faster than males. In fact between 1985 and 1996 the number of smoking deaths among women increased 77% [63, 64]. Recent reports of the U.S. Surgeon General [65] and the British Medical Association [66] provide extensive information on the serious reproductive health consequences of smoking for women. These include, but are not limited to, the following: women develop smoking-related illnesses related to hormonal status and reproductive function; smoking is linked to decreased fertility in women and to early menopause and more symptomatic menstruation; women who use oral contraceptives and smoke have

an increased risk of stroke and a ten-fold greater risk of suffering a heart attack, compared with women who do neither; and there is a strong association between smoking and cervical cancer, as well as an emerging link to breast cancer.

Prescription drugs—Health professionals have known for 25 years that tranquillizers can be addictive—even at standard doses—if taken for more than several weeks, yet these drugs are still prescribed to women for much longer periods [21]. Neither health care providers nor women are generally aware of the wide range of withdrawal symptoms associated with stopping tranquillizer use or of the guidelines for gradually reducing their use. Many problems may result from attempts to stop, including increased anxiety and panic attacks, flu-like symptoms, hypersensitivity to light, depression, restlessness, poor memory and concentration, dizziness, weakness, tremors, heart palpitations, sweating, nausea, indigestion, and bodily pains [67].

Illicit drugs—The health effects of illicit drug use can vary among women, as well as between women and men, as disparately as the range of drugs available for use. The degree of effect will depend not only on the type of drug consumed, but also on such factors as the frequency and amount used and general health status of the individual. For example, it is reported that ecstasy may affect women differently than men, with women experiencing more intense perceptual changes and impaired decision-making, as well as more long-term effects such as depression, mood swings, paranoia and anxiety [68].

One of the most harmful modes of illicit drug use is injecting (IDU). Women are at an increased risk of experiencing physical health complications from injection drug use [69]. IDU is also a primary risk factor for the transmission of blood-borne diseases. Drawing on available data, females represent 26.5% of the total cumulative adult AIDS cases attributable to IDU in Canada [36]. The proportion of adult male AIDS cases attributed to IDU steadily increased from 3.8% in 1992 to a peak of 19.3% in 2000, and between 15-17% in 2001-02. The proportion of adult female

AIDS cases attributed to IDU increased steadily from 18.0% in 1992 to a peak of 46.2% in 1998 and dropped to 37% in 2000 [70]. Due to the small number of cases, trends since then are difficult to interpret [70]. IDU is also linked to high-risk sexual behaviours (e.g., sex trade work), which in turn are associated with a range of negative health impacts [71]. This situation is even more acute for Aboriginal women as they are over-represented in the IDU population [72-74].

What challenges are faced by pregnant women and mothers who use substances?

In the past decade there has been increased awareness of the potential harm to women's and children's well-being associated with substance use during pregnancy, and of barriers to care experienced by pregnant and parenting women. According to the Canadian literature on women's use of alcohol during pregnancy, there are substantial issues that pregnant women face along with their substance use. These include the use of other substances and factors related to social (e.g., low income/social economic status/poverty), legal (e.g., involvement in the criminal justice system) and health (e.g., limited access to prenatal/postnatal care and services) issues [75-79]. It is important to recognize that among Aboriginal women in Canada, these factors frequently reside in the context of colonial oppression and its aftermath, including ongoing social and economic marginalization and the intergenerational link between residential schooling and FASD among Aboriginal peoples [80].

Mothers with substance use problems also face devastating barriers to treatment [42, 47, 81]. Foremost among these barriers is child welfare policy that makes it difficult for substance-using mothers to disclose that they need help, for fear of losing custody of their children. For example, mothers who have been able to access treatment in Vancouver report high levels of current custody problems (35%) and loss of custody in the past (35%) [61]. Child-centred policy often serves to limit the rights of the mother, rather than enhance the mother's health, safety and capacity to parent [47]. Furthermore, treatment services supportive of women's role as mothers are very limited in Canada,

and mothers who are able to retain custody find themselves in the position of having to temporarily place their children in the custody of child welfare in order to access residential treatment. The 2004 United Nations report on *Substance Abuse Treatment and Care for Women* concluded that "[e]ngaging and retaining pregnant and parenting women in treatment requires collaboration between the substance abuse treatment sectors or prenatal care and child welfare... Ideally, services should be accessed through a single site" [56, p. 3].

How are trauma, violence and abuse linked to substance use for girls and women?

Violence in the lives of women and children is widespread. Substance use problems, mental health symptoms and physical health problems can all be related to victimization in both direct, as well as complex, indirect, mutually reinforcing ways [82-88]. Illicit substance use and other self-harming behaviours are often directly linked to experience(s) of trauma, violence and abuse [89, 90]. Substance problems also arise from using substances as mechanisms to cope with chronic pain, gynecological difficulties, stress, anxiety, panic, dissociation and depression, which are also connected to experiences of victimization [91]. Substance use and mental health problems may also work to put women at greater risk of victimization.

In the case of violence, as for most health and social indicators, Aboriginal women in Canada are more severely affected [92, 93]. The mortality rate due to violence for Aboriginal women is three times that for non-Aboriginal women, and hospital admissions for alcohol-related accidents are three times higher among Aboriginal females [94].

Conclusions and implications: moving forward on women's substance use issues

Until recently, less attention has been brought to women's substance use than to men's, in part because women's substance use has not been as high as men's (in categories other than prescription

drugs). We are now seeing convergence in levels of use among women and men in some categories of drugs and in some age groups. We are also more aware of how even lower levels of use can be associated with more serious health consequences for women and girls. Increased research reveals that both sex differences and gender influences affect women's and men's use of and response to substance use, and their treatment needs are correspondingly different.

There are compelling reasons for considering sex and gender in addictions research and service provision, as well as for bringing gender-based analysis to alcohol, tobacco and other drug policies. In all these arenas it is also important to account for differences *among* girls and women, for example in socio-economic status, ethno-cultural identity, occupation, family roles, reproduction, sexual orientation, child care responsibilities, and vulnerability to sexual and intimate partner violence.

Central to action on substance use by girls and women is addressing the misinformation and discrimination directed at girls and women with substance use problems. This is essential in helping to reduce the guilt and shame that prevent women from learning more about the risks of substance use, and identifying if/where they may need help. If we are to see significant improvements in women's health, a colossal shift needs to take place in public, professional and governmental attitudes to women who use substances and who experience negative consequences from such use. Child welfare policy, harm reduction policy, mental health policy, reproductive health policy, perinatal service policy, and corrections policy are core areas that could benefit from the integration of a more informed and empathetic approach to women's substance use.

In prevention and health promotion efforts to date, schools, helping professionals, addictions system planners, and public policy makers for the most part have not paid attention to the unique motivations for use and the accelerated consequences of use for girls and young women. Instead of a one-size-fits-all approach, prevention and health promotion programming should attend to differing needs for

information and support on physical health, emotional health, and social contextual issues. Research that examines and elucidates the impact of sex, gender and culture on pathways to substance use is critically needed to support this work.

National and provincial strategic plans to address Fetal Alcohol Spectrum Disorder need to balance work on diagnosis and intervention among those affected by FASD with support to women of child-bearing years to prevent FASD. FASD prevention from a women's health perspective includes both compassionate, brief interventions with all women by physicians and other service providers, as well as withdrawal management and comprehensive, respectful, holistic support for pregnant women with identified substance use problems. The Canadian Centre on Substance Abuse, through its Clearinghouse on Fetal Alcohol Spectrum Disorder and its online information service (see <http://www.ccsa.ca/fas/>) is well-positioned to support decision makers and service providers across the country in bringing about the profound attitudinal, service system, and policy changes needed to improve our response to women of child-bearing years who use alcohol, tobacco and other drugs.

In treatment and harm reduction services as well, substantive change is needed to improve our response to girls and women. Providers, in the full spectrum of services working with women and their families, need to actively make these services welcoming, accessible, relevant and safe for women with substance use problems. Trauma and mental health issues that are linked to substance use problems disproportionately affect women, and their devastating impact is usually exacerbated by the failure of service systems to provide appropriate, integrated services for women with co-existing mental health, substance use, and trauma histories. However, significant advances are being made in making treatment systems "trauma informed" [95] in both Canada [96, 97] and in the U.S., where the evaluation of a multi-site, five-year demonstration project [98] has provided critical information on serving women with co-occurring trauma-related, mental health, and substance use problems.

A comprehensive sex and gender analysis is essential in all research on substance use in Canada. A positive step forward in bringing gender-based work into the research realm is the Integrated Mentor Program in Addictions Research Training (IMPART), a strategic training initiative on gender, women and addiction, funded by the Canadian Institutes of Health Research (<http://www.addictionsresearchtraining.ca/>). IMPART is a multidisciplinary research training program that brings academic and professional researchers, scientists, clinicians, policy analysts and service providers together to increase the skills and knowledge of the health research community in the area of addictions in girls and women, to apply a gendered approach to the study of addictions, and to bridge research, policy and practice in the area of girls, women and addictions.

In summary, in research and policy, as well as in the practice of treatment, harm reduction, prevention and health promotion, the opportunities to apply what we know about sex and gender differences in the pathways to and manifestation of substance use problems are compelling. The Canadian Centre on Substance Use and the British Columbia Centre of Excellence for Women's Health look forward to working with other interested researchers, policy and decision makers, clinicians, community-based program providers, and advocates in collaborative efforts to build programs and policy that are responsive to the needs of girls and women.

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The mission of the British Columbia Centre of Excellence for Women's Health is to improve the health of women by fostering collaboration on innovative, multi-disciplinary research endeavours and action-oriented approaches to women's health initiatives, women-centred programs, and health policy.

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The Canadian Centre on Substance Abuse (CCSA), Canada's national addictions agency, was established in 1988 by an Act of Parliament. CCSA provides a national focus for efforts to reduce health, social and economic harm associated with substance abuse and addictions.

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