

Coping with Becoming a Teen

When You Have Been Maltreated as a Child

UP AGAINST A WALL



**SUBSTANCE USE AMONG ADOLESCENTS IN CHILD WELFARE
VERSUS ADOLESCENTS IN THE GENERAL POPULATION:**

A Comparison of the Maltreatment and Adolescent Pathways (MAP) Longitudinal Study and the Ontario Student Drug Use Survey (OSDUS) Datasets

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(MAP) Longitudinal Study and the Ontario Student Drug Use Survey (OSDUS) Datasets

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Photograph provided by Maureen Murphy.



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Executive Summary

Introduction

It is well established that many adolescents use alcohol and drugs. The likelihood of substance use problems in adolescence and adulthood increases with several risk factors, including childhood maltreatment, indicated by physical, sexual, and emotional abuse and/or neglect. With 15% of reported child welfare cases having confirmed caregiver alcohol and/or other drug abuse, youth involved with the child welfare system are an at-risk group for substance abuse and substance use-related problems, such as academic problems, unsafe sex practices, driving under the influence of alcohol or other drugs, getting into fights, and dating violence. Despite research confirming increased risk of substance abuse among youth involved in child welfare and those with histories of childhood maltreatment, to date, the impact of child welfare involvement and maltreatment on substance use among Ontario youth is not well documented.

Purpose

The purpose of this study was to examine:

- differences in substance use among youth involved with the child welfare system compared with youth who are not;
- the specific relationship between childhood maltreatment experiences and substance use;
- gender differences in substance use between youth involved with the child welfare system and youth who are not; and
- the impact of post-traumatic stress disorder (PTSD) symptoms on the relationship between childhood maltreatment and substance use.

Method

Comparisons between youth involved with child welfare and youth who are not were based on two separate samples: youth participants in the Maltreatment and Adolescent Pathways (MAP) Longitudinal Study, and

student participants in the Ontario Student Drug Use and Health Survey (OSDUHS), formerly the Ontario Student Drug Use Survey (OSDUS). The use of identical substance use items in both studies made direct comparisons between the samples possible.

Results

Youth involved with child welfare reported higher use of cannabis and other drugs. Females in this category were especially at risk, reporting greater cannabis and other drug use in their lifetime, as well as frequent other drug use, compared with females in Ontario who were not involved in the child welfare system. All types of maltreatment, except sexual abuse, were linked with substance use patterns, although these relationships varied depending on who provided the information regarding maltreatment history (the child welfare caseworker or the youth).

MAP females emerged as at greater risk across a range of substance use variables, compared with MAP males, suggesting that females are a particular high-risk group for a range of substance problems.

Results also indicated that for females, clinical levels of problems were associated with alcohol and drug use. PTSD symptoms were found to be a significant mediator of the childhood maltreatment-adolescent substance use relationship. This mediation, however, was moderated by gender. Specifically, for females involved with child welfare, PTSD symptomatology explained the relationship between a history of childhood maltreatment and drug use.

Discussion and Implications

While adolescence is a time of risk taking and experimental substance use, the findings indicate that child welfare teens are an at-risk group for substance use, especially drug use. Child welfare females are a high-risk group, reporting functional impairments with

drinking and drug use. For females, affective disturbance may be a key component, as PTSD symptomatology significantly mediated the relationship between a history of maltreatment and substance use.

A wide range of strategies are indicated: targeted prevention and drug education activities and multifaceted treatment programs that address both trauma backgrounds and substance abuse issues.

Training for child welfare caseworkers should include screening for substance use and substance-related problems, strategies for managing PTSD symptoms and for developing healthy coping methods. Female youth involved with child welfare, as a higher risk group, may need special attention and gender-specific approaches to interventions should be a consideration.

CHAPTER 1: Introduction

Substance Use in Adolescence

Substance use during adolescence can have multiple negative effects. Alcohol is the most frequently used substance among adolescents, and its use is associated with significant risks including impaired driving, physical and psychological concerns, school failure and dropout (Battin-Pearson et al., 2000). Research suggests that initiating drinking at a younger age is associated with an increased risk of developing alcohol abuse or alcohol dependence (Grant & Dawson, 1997). In addition, alcohol use is significantly associated with four of the leading causes of death among adolescents: motor vehicle accidents, other unintentional injuries, homicides, and suicides (Tucker, Ellickson, & Klein, 2003).

Alcohol's effects on neurodevelopment may mediate all of these consequences. Recent research on brain development during adolescence argues that "excessive use" is the introduction of any "toxin" during a critical growth period (Mayes & Bornstein, 1996; Annenberg Commission on Adolescent Substance Abuse, 2005).

Although alcohol use by those younger than 19 years is illegal in Ontario, a distinction between licit and illicit substances persists in the literature. Specifically, legal substances typically refer to alcohol and cigarettes, and account for the majority of substance-related costs in Canada (Canadian Centre on Substance Abuse, 2007). Illicit drugs typically refer to those classified as "controlled" under the *Controlled Drugs and Substances Act*, including cannabis, cocaine, hallucinogens, and ecstasy. For the purposes of this report, all substance activity discussed is illegal, given the focus on under-age alcohol consumption and use of illicit drugs.

Regarding substances other than alcohol, cannabis (marijuana) is the most widely used drug among adolescents and is associated with risks similar to those of alcohol use. For example, early adolescent

marijuana use is associated with increased risk of academic problems, unsafe sexual practices, and further alcohol and marijuana use (Brook, Balka, & Whiteman, 1999). In addition, marijuana use in adolescence has been implicated as a causal factor in the development of schizophrenia in those at risk of developing the disease, with higher levels of use associated with a greater risk (Arsenault et al., 2004). Early drug use (i.e., use by age 13) has also been found to predict later drug addiction, even when controlling for well-established risk factors such as parental alcoholism and criminal justice involvement (King & Chassin, 2007).

These findings highlight the potential negative and long-term consequences associated with excessive substance use in adolescence—underscoring the need for additional research and knowledge dissemination concerning risk and protective factors, youth prevention and treatment programming, and health policy strategies for reducing the negative impact of adolescent substance use and abuse.

Prevalence of Substance Use in Adolescence

Despite the negative consequences, substance use is common among adolescents (Adlaf & Paglia-Boak, 2007; Johnston et al., 2007), as is involvement in other risk behaviours including aggression and unsafe sexual practices (Centers for Disease Control and Prevention, 2006). Motivations for risky behaviours can include acceptance by peers, thrill-seeking, assertion of independence, and testing of limits. Findings from a recent national survey of American adolescents indicate that more than one-quarter tried substances before entering high school, with just under 50% remaining abstinent throughout high school (Johnston et al., 2007). For teens, alcohol remains the substance of choice; almost half of the students in grade 12 (45.3%) reported alcohol use in the past 30 days, and 30% reported being drunk (Johnston et al., 2007).

According to the most recent Ontario Student Drug Use and Health Survey (OSDUHS: Adlaf & Paglia-Boak, 2007), alcohol, cannabis, and other drug use seems to have stabilized or decreased in Ontario. There is, though, increased use of non-medical prescription opioids (e.g., pain relievers including Oxycontin, Percocet, Percodan, Tylenol #3, Demerol and Codeine). Overall, 12% of Ontario adolescents reported past-year substance use other than marijuana and alcohol, with solvents (5.8%), stimulants (5.7%), hallucinogens (5.5%), ecstasy (3.5%), and cocaine (3.4%) being the most commonly used substances.

Consistent with findings from an American survey (Johnston et al., 2007), alcohol remains the most frequently used substance among Ontario youth. Approximately 61% of Ontario students in grades 7 to 12 reported alcohol use in the past year, and one-quarter reported engaging in binge drinking (i.e., drinking five or more drinks per drinking occasion). In addition, 19% of Ontario youth were classified as hazardous drinkers, meaning they met the cut-off for problem drinking as assessed by the Alcohol Use Disorders Identification Test (AUDIT, in Saunders et al., 1993), a screening measure for assessing alcohol-related problem levels within the OSDUHS.

Cigarette use is less common than drinking, with 12% of youth reporting use in the past year, and 5% reporting daily cigarette smoking. Cannabis is the most commonly used drug among Ontario students; 26% reported using cannabis at least once in the past year, 14% used cannabis six or more times in the past year, and 3% reported using it daily.

The OSDUHS also includes a screening tool that measures drug use situations experienced by adolescents called the CRAFFT, where the acronym refers to alcohol use in certain contexts (i.e., C= in car; R=to relax; A=while alone; F=forget use; F=family/friends tell you to cut down; T=use lead to trouble) (Knight et

al., 1999). The CRAFFT measure asks about activity over the last 12 months. A score of two or more identifies adolescents who exhibit problematic drug use. About 25% of OSDUHS drug-using youth reported problematic drug use.

Overall, these statistics confirm what is already known: drug and alcohol use is common among adolescents, with alcohol, cannabis, and cigarettes being the most commonly and frequently used substances.

Adolescent Addiction: Abuse, Dependence, and Co-morbidity

Adolescent addiction has reached a consensus definition in the literature (Annenberg Commission on Adolescent Substance Abuse, 2005) with key features that include:

- (a) preoccupied thoughts or cravings of drugs or drug-related experiences;
- (b) repetitive, compulsive drug behaviours that interfere with normal activities; and
- (c) neuroadaptation to drug exposure, such that pharmacological tolerance and withdrawal behaviours are observed with abrupt cessation of use.

According to the *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV; American Psychiatric Association, 1994)*, substance use disorders involve impairments in functioning across a range of contexts, including school, work, with friends, partners and family. Often, recurrent use results in negative consequences accompanying abuse, such as failure to fulfill expected obligations. Next, substances are used in situations that may cause physical harm. Then, substance-related legal problems emerge. Finally, serious impairment in functioning accompanies *dependence*, including tolerance and/or withdrawal. Although not included in the DSM-IV diagnostic criteria,

dependence is frequently associated with neglect of basic functions such as eating, sleeping, and hygiene. Withdrawal effects are typically opposite those for intoxication (e.g., if intoxication leads to elation, withdrawal reflects low mood), and vary widely across drugs.

It is clear that a substance use disorder diagnosis is associated with a host of negative consequences, and that adolescent substance use disorders frequently co-occur with other psychological diagnoses. Among community samples, adolescents with a substance use disorder diagnosis are up to six times more likely to be diagnosed with a mood disorder, two times more likely to be diagnosed with an anxiety disorder, and 14 times more likely to be diagnosed with a conduct/oppositional disorder (Roberts, Roberts, & Xing, 2007). Within alcohol and drug treatment settings, approximately 60% of clients were diagnosed with some type of mental health disorder within the last year including attention deficit hyperactivity disorder, conduct disorder, oppositional defiant disorder, and anxiety and mood disorders (Garland et al., 2001). These findings suggest that among adolescents with substance use disorders, concurrent psychiatric diagnoses are the norm.

Several reasons could explain the overlap between substance use and other diagnoses. For example, teens who experience anxiety symptoms may seek relief with alcohol and drugs, such as marijuana, for their sedating properties-so-called self-medication (e.g., Stewart, 1996). Furthermore, substance use is often seen as part of a larger "problem behaviour syndrome" (e.g., Donovan & Jessor, 1985), with higher levels of substance use co-occurring with other adolescent problem behaviours, including aggression and disruptive behaviours, rule violations, and difficulties with attention and impulsivity.

Although the order in which substance use and psychiatric diagnoses occurs is not yet established, youth who are already at risk for mental health concerns are also at an increased risk for substance use. In particular, youth who have experienced maltreatment and are already at risk for psychological concerns may be particularly susceptible to substance use. As discussed below, several other factors heighten the risk of substance use among youth who have experienced maltreatment.

Substance Use among Youth Who Have Experienced Maltreatment:

Multiple Sources of Risk

Within normative development, the testing of limits that often accompanies adolescent substance use may help to establish parameters for future acceptable conduct. Ongoing monitoring by parents, consistent correction, school consequences and, in some cases, legal sanctions, often serve the purpose of righting the youth's behaviour toward pro-social norms and responsible autonomy. But teenagers who have histories of neglect and/or abuse may lack supervision and emotional support from parents and, given frequent school changes, from involved school officials - all of which may disrupt this natural corrective process for excessive youth substance use (e.g., see Clark, Thatcher & Maisto, 2004). In addition, risk factors for substance use, such as poverty, social skills deficits, parental substance abuse, and academic problems, are more likely among youth with histories of maltreatment, compared with those without such histories (Cash & Wilke, 2003; Crozier & Barth, 2005).

According to social learning theory, youth who have experienced maltreatment are at risk of substance use that goes beyond experimentation or time-limited episodes because they have poor role models, their caregiver reinforces drug-taking behaviours directly, or they make decisions based on what they perceive to

be limited options. Youth who have experienced maltreatment may escalate from experimentation to problem use or dependence because they are already vulnerable and living in a risk-promoting environment (Annenberg Commission on Adolescent Substance Abuse, 2005). Further, as some caregivers who maltreat their children abuse substances themselves, risk is present even if environmental risks are minimized, as with the presence of a competent, non-substance abusing co-caregiver. In addition, children of alcoholics have a greater likelihood of developing an addiction, even when separated from their birth parents and raised by non-alcoholic parents (Schuckit, 2000). Thus, a history of alcoholism from either biological parent increases the risk for the child, regardless of home placement status.

Findings from an Ontario sample of youth and adults (ages 15 and older) indicate that parental substance abuse increases the likelihood of childhood maltreatment (adult retrospective reporting on physical and sexual abuse; Walsh, MacMillan, & Jamieson, 2003). Other researchers have found that parental substance use is more likely among youth with maltreatment histories (e.g., Kilpatrick et al., 2003). Secondary analyses of the first wave of the *Canadian Incidence Study of Reported Child Abuse and Neglect* (Wekerle, Wall, Leung, & Trocmé, 2007) found that caregiver drug or alcohol use was a predictor of substantiated maltreatment. In 15% of cases where maltreatment was substantiated, the caseworker confirmed drug or alcohol use by the caregiver during the previous six months by either witnessing intoxication, or through evidence of caregiver treatment for substance abuse. Taking into account a range of caregiver vulnerability factors (e.g., social isolation, mental health), caregiver substance use was the strongest single predictor of substantiation of maltreatment versus non-substantiation, particularly in terms of physical abuse and neglect case decisions.

Thus, caregiver substance abuse may be an issue for understanding the outcomes for youth who are maltreated. Youths with histories of maltreatment whose caregivers have problem substance use are not only exposed to adult models that engage in violence and illegal activity, but they also have access to substances at home—and may lack sanctions or even be encouraged to use. Finally, the protective factors noted in the alcohol literature (e.g., strong commitment to prosocial activities like sports, religion/church, and high self-esteem; Liepman et al., 2002; Luster & Small, 1997) may be absent in families where maltreatment occurs.

Deterrents to avoid excessive use or modeling of healthy coping strategies may be absent in the home of children who have experienced maltreatment. Such homes, which are frequently socio-economically disadvantaged, chaotic, and unsafe, may bolster access to substances because of lack of adult supervision, more time spent on the street, and the presence of greater illegal drug trade activity in the neighbourhood (Wekerle & Wall, 2002).

Direct peer pressure does not seem to be a strong factor in teen alcohol use. According to the OSDUHS, 21% of youth reported that they had been offered, sold, or given a drug at school in the past year (Adlaf & Paglia-Boak, 2007). Youth tend, however, to select similarly oriented peers that are either supportive or non-supportive of drug use (e.g., Schulenberg & Maggs, 2002).

Also of particular concern in youth who have experienced maltreatment is functional impairment. Alcohol and drug use can cause deficits in learning and memory, difficulties concentrating, and long-term neurological damage (National Institute on Drug Abuse, 2008). Substance use among youth with histories of maltreatment may lead to cognitive difficulties that result in school frustration and disengagement,

heightening the already established risk of school dropout. Indeed, research has shown that dropping out of school is significantly associated with alcohol and drug use (Townsend, Flisher, & King, 2007). Staying in school, however, may have a protective effect for youth with histories of maltreatment. Research shows that remaining in school is linked with lower rates of psychopathology for Canadians reporting physical and/or sexual abuse in childhood (Williams, MacMillan, & Jamieson, 2006). Specifically, those who completed high school, whether they were high or low achievers, were less likely to show externalizing disorders, which are also commonly associated with substance use disorders. Overall, staying in school affects social and psychological functioning, with benefits such as greater interpersonal competence and a sense of personal mastery. A healthy school environment may compensate for the lack of discipline, responsiveness, predictability, and structure at home, possibly playing a key role in promoting mental health.

In short, substance use may be one of several elements defining a negative trajectory for youth who have experienced maltreatment. For child welfare youth, this risk for negative outcomes may be further increased when support by the foster family and child protective services terminates when the youth enters the upper age-limit for care—typically 16-21 years of age. A youth's successful adaptation may be jeopardized if, after care ends, the youth returns to caregivers whose parental rights had been terminated (in the case of Crown wards), turns to the streets, or relies more heavily on unhealthy ways of coping, such as substance use. Thus, for children involved in child welfare, substance use is both an immediate concern and a long-term quality-of-life issue.

Child Maltreatment, Trauma, and Substance Use among Youth

Maltreatment may occur as a single episode or as a chronic pattern of interactions within the family. It can manifest as a failure to protect or as actual perpetration of maltreatment. The differing clinical features of a single-event versus chronic maltreatment are well documented (e.g., De Bellis, 2002b; Koob, 1999). Maltreatment of high intensity that is witnessed, perceived, or actual may be deemed traumatic if it was experienced as a severe threat to the person's life, safety, or integrity. This includes direct assaults of physical and sexual abuse; indirect assaults, such as witnessing domestic violence; and the higher likelihood of injury and assault, as with neglect. Further, we know that child welfare youth often experience more than one form of maltreatment (see Wekerle, MacMillan, Leung, & Jamieson, 2007) and that the cumulative effects of various types of maltreatment are often more severe than effects from a single type (for a review, see Higgins & McCabe, 2001). These traumatic reactions fall into the category of post-traumatic stress disorder (PTSD), as defined by psychiatric diagnostic criteria (American Psychiatric Association, 1994).

The initial response to single-event trauma by a child or youth may be hyper-arousal—notably, hyperactivity, disorganization, and disrupted routines. However, as trauma is repeated, the adaptation response can become more complicated by dissociation, affective disturbance, and prolonged gaps in historical memory. With a single-event trauma, there is an emphasis on pathological fear and erroneous associations of people and objects with danger (Tolin & Foa, 2002). Separation anxiety may follow and extend over time in the form of not wanting to be alone, believing that the world and people are dangerous, and that bad things happen unpredictably.

From ages 8 to 10, post-traumatic reactions are more in line with adult diagnostic criteria, with females more likely to show PTSD-like responses and males to show aggression responses (Dyregrov & Yule, 2006). A PTSD response includes three categories of symptoms: re-experiencing the trauma (flashbacks, nightmares, intrusive images, recurring dreams); avoiding trauma-related cues (cognitive and “escape” behaviours, numbness, feelings of detachment); and increased arousal (exaggerated startle response, hyper-vigilance, irritability, sleep problems).

A diagnosis of PTSD is often associated with other psychological concerns, including major depression; anxiety disorders such as panic disorder, social anxiety disorder, and generalized anxiety disorder; and behavioural problems such as aggression. Substance use is also associated with PTSD and trauma in general: teens with a substance use disorder are five times more likely to have PTSD and a history of trauma (Deykin & Buka, 1997).

Researchers have typically focused on the PTSD diagnosis, although sub-clinical symptoms are important as they have been linked to significant functional impairment in youth (Carrion et al., 2002; Putnam, 1998). Particularly with youth, symptoms in all three categories may not be present or, if present in all categories, fewer symptoms per category are present as per diagnostic criteria. From a developmental traumatology theoretical perspective (e.g., De Bellis, 2002a), sub-clinical PTSD symptoms can act as a bridging mechanism from maltreatment to subsequent maladjustment in its chronic-albeit low level-affective disturbance. In brief, sub-clinical symptoms point to impairment of the body’s stress response system in that brain structure and functioning has adapted to the maltreatment environment (e.g., vigilance to threat). However, in the non-maltreatment environment, the body’s over-taxed stress response system does not “reset” to normal functioning. Thus, youth who have

experienced maltreatment and suffer from PTSD may have difficulty recovering from prolonged stress periods.

Although not conducted with a random sample of child welfare youth, prior research indicates that PTSD symptoms (self-reported by youth) may partially explain the relationship between maltreatment and adolescent dating violence (Wekerle et al., 2001; Wolfe et al., 2004). No study to date has considered the associations among maltreatment history, PTSD, and substance use in a child welfare sample. Research is needed to examine the mechanisms involved in the relationship between a history of child maltreatment and substance use-including the possible involvement of PTSD symptomatology as a mediating factor.

Substance Use among Youth with Maltreatment Histories:

Gender Differences

Adolescents exhibit clear gender differences in drug and alcohol use. Male youth typically demonstrate higher levels of use than female youth. For example, according to the 2007 OSDUHS, male drinkers binge drink and use marijuana more frequently than do female drinkers. Motivations for use also differ by gender, with females rating most favourably the tension-reducing properties of alcohol, and males rating most favourably its euphoric, relaxing, and sexual disinhibition effects (Annenberg Commission on Adolescent Substance Abuse, 2005).

Some evidence suggests that the relationship between substance use and childhood maltreatment also differs between genders. For example, in follow-up interviews with adults who had reported maltreatment as children, Widom, Ireland, and Glynn (1995) found that women with a history of maltreatment had higher levels of alcohol use as adults than those who had not been maltreated, even when considering factors such as parental alcohol use and socio-economic

disadvantages. Studies examining male youth who exhibit delinquent behaviours show a relationship between maltreatment and substance use, including greater use of marijuana/hashish (Dembo et al., 1992). In determining the effects of maltreatment between genders, other considerations are gender differences in maltreatment rates, notably the consistently higher rate of sexual abuse of females (e.g., Wekerle & Wall, 2002).

Further, the link between substance use and psychopathology may vary by gender. For females, high school alcohol use was linked with earlier onset of anxiety problems (Rohde, Lewinsohn, & Seeley, 1996, as cited in the Annenberg Commission on Adolescent Substance Abuse, 2005). Although anxiety disorders—particularly social phobia and PTSD—are associated with problem alcohol use, such usage typically exacerbates the anxiety issues (e.g., Stewart, 1996; Stewart & Israeli, 2002). In studies of adolescents who have experienced maltreatment, the PTSD-problem alcohol link has been found to be stronger in females (e.g., Clark et al., 1997).

Although the literature is inconsistent in this area, gender remains an important factor related to maltreatment and substance use: analyses of large samples should consider males and females separately.

The Prevalence of Substance Use among Youth with Maltreatment Histories:

Current Findings

Although almost 30% of adolescents in Ontario reported past year drug use (e.g., used one of the following: cannabis, LSD, PCP, other hallucinogens, methamphetamine, cocaine, crack, heroin, stimulants, and/or tranquilizers), and 19% reported hazardous drinking (in OSDUHS, Adlaf & Paglia-Boak, 2007), it remains unclear at the population level how many youth in this high-risk minority are involved with child welfare.

The National Survey of Child and Adolescent Well-Being is a national longitudinal study of 11- to 15-year-olds in the U.S. child welfare system that were reported and investigated as victims of maltreatment. It found that 20% reported low levels of substance use in the past 30 days (i.e., infrequent use and/or use of cigarettes, alcohol, inhalants and non-prescribed medications), and 9% reported moderate-to-high levels of use (i.e., more frequent use of substances and/or use of alcohol or illicit substances). Higher levels of use were reported among youth with conduct problems and among those who reported poor relationships with their caregivers (Wall & Kohl, 2007).

In a sample of older adolescents (i.e., students in grades 10 through 12) in Oregon (Moran, Vuchinich, & Hall, 2004), youth with a history of physical maltreatment were over two times more likely to report high levels of tobacco and alcohol use, and almost three times more likely to report high levels of illicit drug use, compared with those with no physical maltreatment. In addition, youth with a history of sexual maltreatment were approximately three times more likely to report high levels of tobacco and alcohol use, and almost four times more likely to report high levels of illicit drug use, compared with those without a history of sexual maltreatment (Moran et al., 2004).

What is missing from the literature on child maltreatment in general, and in Canadian samples in particular, is an examination of the rates of substance use among youth with histories of maltreatment compared with those without such histories. The present report represents an analysis of Year-1 data from the Maltreatment and Adolescent Pathways (MAP) Longitudinal Study, which includes a random selection of teens, aged 14-17 years, from the active caseload of urban child welfare (Children's Aid Society) agencies.

CHAPTER 2: Research Methods

To better understand the prevalence, risk, and underlying mechanisms involved in substance use behaviours of youth involved with child welfare, the current report seeks to address the following:

- **Objective 1:** Using parallel substance use items drawn from the 2005 Ontario Student Drug Use Survey (OSDUS) and the MAP, what are the overall rates of substance use in the MAP sample, and how do rates of substance use among MAP youth compare with OSDUS youth who do not report some level of lifetime involvement with Ontario child welfare?
- **Objective 2:** Among youth in the MAP sample, what is the relationship between specific types of childhood maltreatment experienced and types of substance use? Is there an association among multiple forms of maltreatment and particular substances, or particular types of maltreatment and multiple substance types used?
- **Objective 3:** How do rates of substance use differ for male and female youth in the MAP versus the OSDUS dataset? Is substance use associated with age among male and female youths in the MAP sample?
- **Objective 4:** Given the significant link between childhood maltreatment and symptoms of PTSD, and the negative long-term consequences associated with PTSD symptoms, is there a significant gender-moderated mediation of the relationship between childhood maltreatment and substance use by PTSD symptomatology considering sub-clinical rather than disorder levels?

Method

The 2005 cycle of the OSDUS asked the question about lifetime involvement with Ontario child welfare, as a result we were able to compare findings on the Ontario

Maltreatment and Adolescent Pathways (MAP) youth with findings on the 2005 OSDUS youth who were not welfare involved. This comparison is based on the MAP Year-1 assessment point (collected March 2004 to December 2007) that utilized the OSDUS questionnaire package.

MAP Year-1 Sample

The MAP longitudinal study collects data from youth (N = 388; 52% females) initially and every six months to a two-year follow-up point. The MAP study has a 70% recruitment rate, with 388 youth tested out of 554 eligible youth contacted. The study's retention rate was 83.5% at the one year testing point. The MAP study was approved by the University of Western Ontario (UWO) Research Ethics Board and the ethics committees at participating child protective agencies, and is reviewed annually by the UWO Research Ethics Board. Since risk behaviours typically start in early adolescence, mid-adolescence was the age range selected to examine ongoing risk behaviour rates. MAP teens were, on average, 15 years at intake (M = 15.67 years; SD = 1.08), and one-third indicated bi- or multi-racial background. Most teens were living away from their biological families (37% foster home, 27% group home, 14% independent living/other). Caseworkers were also surveyed for a subsample of the MAP participants; for this subsample, most youth experienced more than one form of substantiated maltreatment (sexual, physical, emotional abuse and/or neglect). MAP participants were more likely to have experienced sexual abuse if they were female than male. One year after the MAP testing, the OSDUS questionnaire package was administered to MAP participants, providing the basis for the comparisons of the prevalence of substance use between child welfare youth and youth from the general population. This report is based on 177 MAP youth (61% female), ranging in age from 15 to 19 years old (M = 16.80, SD = 0.99).

Measures of Maltreatment

For these analyses, two different approaches were used to capture maltreatment histories among MAP youth:

- caseworker assessments of substantiated maltreatment or risk for a subsample (n = 50); and
- youth self-reports of experiencing lifetime maltreatment, using the Childhood Trauma Questionnaire (Bernstein & Fink, 1998; see Appendix A), and the Childhood Experiences of Violence Questionnaire (CEVQ; Walsh et al., 2000; (Walsh, MacMillan, Trocmé, Jamieson, & Boyle, 2008; see Appendix B).

Caseworker Assessments

A short questionnaire was given to caseworkers when they referred youth to the MAP study. Workers were asked to assess each youth's risk, experience, and severity of maltreatment, as well as the youth's risk of substance use, intimate partner violence perpetration and/or victimization, risky sexual practices, and mental health problems. Caseworkers were also asked to assess youth global functioning based on diagnostic criteria outlined in the DSM-IV (American Psychiatric Association, 1994). Although caseworkers provided information on multiple domains, the analysis that follows includes only data regarding maltreatment status. This provides convergent validity to youth self-reports of maltreatment experience.

Youth Self-reports

As noted above, experiences of childhood maltreatment were assessed via a brief version of the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998). This CTQ short form (Bernstein et al., 2003) assesses maltreatment via a standard stem (e.g., While you were growing up...). Participants rate 29 items on a 5-point scale (1 = never true, to 5 = very often true) across five subscales:

- emotional neglect;
- physical neglect;
- sexual abuse;

- physical abuse; and
- emotional abuse.

The CTQ does not capture witnessing domestic violence. Please see Appendix A for a sample of the items.

Two-week test-retest reliability of the CTQ for a MAP youth subsample (n = 52) was moderate [physical abuse (r = 0.64), sexual abuse (r = 0.52), emotional abuse (r = 0.70), emotional neglect (r = 0.63), and physical neglect (r = 0.56)], while internal validity or consistency was high, when considering Cronbach's alpha [physical abuse ($\alpha = 0.92$), sexual abuse ($\alpha = 0.88$), emotional abuse ($\alpha = 0.85$), emotional neglect ($\alpha = 0.87$), and physical neglect ($\alpha = 0.68$)]. Youth reports and caseworker ratings of childhood maltreatment were significantly correlated in terms of physical abuse (r = 0.48), sexual abuse (r = 0.58), and physical neglect (r = 0.26). For emotional abuse and emotional neglect, youth reports and caseworker assessments were not significantly correlated.

The Childhood Experiences of Violence Questionnaire (CEVQ) (Walsh, MacMillan, Trocmé, Jamieson, & Boyle, 2008; Wekerle et al., 2006) also assessed self-reported maltreatment. The CEVQ assesses:

- physical abuse;
- sexual abuse;
- emotional abuse;
- witnessing domestic violence;
- peer-to-peer violence; and
- exposure to corporal punishment.

Domestic violence refers to violence involving the actions of parents, step-parents, or guardians, or actions involving a parent, step-parent, or guardian and another adult in the home. *The CEVQ does not capture neglect experiences.* This self-report measure queries age at time of maltreatment, frequency, outcome, and perpetrator characteristics (see

Appendix B for a sample of the items). The CEVQ demonstrates good test-retest reliability (kappas ranging from 0.61 - 0.91) and validity-as determined by clinician assessment-with estimates falling in a similar range (kappas for physical and sexual abuse were 0.68 and 0.74, respectively).

Two-week test-retest reliability of the CEVQ among the MAP sample ranged from moderate to high [physical abuse ($r = 0.88$), sexual abuse ($r = 0.71$), emotional abuse ($r = 0.51$)], while internal validity or consistency also ranged from moderate to high, when considering Cronbach's alpha [physical abuse ($\alpha = 0.82$), sexual abuse ($\alpha = 0.70$), emotional abuse ($\alpha = 0.68$)]. The CEVQ is used to provide more detailed description of maltreatment (or failure to protect). It can indicate where caregivers are the perpetrators, which would be the chief concern in child welfare cases.

Finally, a modification was made to the MAP CTQ, adding one item (neglect) to complete the categories of maltreatment. The CTQ had three items (sexual abuse, physical abuse, emotional abuse) to assess youth perceptions or self-labeling of maltreatment. Using the same CTQ question stem ("While growing up") and response options, youth responded to the items:

- "I believe that I was sexually abused;"
- "I believe that I was physically abused;"
- "I believe that I was emotionally abused;" and
- "I believe that I was neglected."

Prior research (e.g., Wekerle et al., 2001) indicated that youth perceptions were associated with the level of PTSD symptomatology reported. Thus, it may be important to simultaneously consider multiple measures of maltreatment: the official threshold based on caseworker assessment, the youth's recollected experiences, and the youth's interpretation of his/her experiences. In the analyses and tables that follow,

both the CEVQ and CTQ are included to capture the full range of youth self-reported maltreatment history and its relationship to substance use variables.

Trauma Symptomatology

PTSD symptomatology was assessed with the Trauma Symptom Checklist for Children (TSCC) (Briere, 1996), a common measurement tool in maltreatment research. The TSCC is a 54-item self-report measure consisting of six clinical scales (anxiety, depression, anger, PTSD, dissociation, and sexual concerns) and two validity scales (under-response and hyper-response). While the TSCC does not have a set time reference, it does ask whether symptoms occur at a frequency of "almost all of the time," "lots of time," "sometimes," or "never." The measure was normalized on teens and was intended to evaluate children who have experienced traumatic events (see Appendix C for a sample of the items). Reliability is high (internal consistency, $\alpha = 0.82 - 0.89$) and good convergent, discriminant, and construct validity were established.

The two-week test-retest reliability of the MAP subsample on the TSCC was moderate ($r = 0.50$) and internal validity was very high ($\alpha = 0.97$). The TSCC provides a clinical cut-off for each subscale. In keeping with developmental traumatology hypotheses on the importance of sub-clinical symptoms, a total score of any clinical elevation among the six clinical subscales was used. From 4% to 20% of MAP youth showed clinical elevations, with significantly more females than males above the clinical cut-off on the anxiety and sexual concerns subscales.

Specific symptoms may provide some further ideas regarding gender differences; however, these must be considered with caution as they do not capture the entire subscale, syndrome, or diagnosis, and items are not reported for teens that have not experienced maltreatment.

By TSCC item (see Appendix D), MAP males reported significantly ($p < 0.05$) greater frequency than females on:

- Touching my private parts too much;
- Thinking about touching other people's private parts; and
- Having sexual feelings in my body.

By TSCC item (see Appendix D), MAP females reported significantly ($p < 0.05$) greater frequency than males on:

- Not trusting people because they might want sex;
- Getting afraid or upset when I think about sex;
- Going away in my mind, trying not to think;
- Feeling dizzy;
- Bad dreams or nightmares;
- Remembering things that happened that I didn't like;
- Remembering scary things;
- Feeling scared of men;
- Remembering things that I don't want to remember;
- Feeling mean;
- Feeling like I hate people;
- Feeling mad;
- Feeling lonely;
- Feeling sad or unhappy;
- Crying;
- Wanting to hurt myself;
- Washing myself because I felt dirty inside;
- Feeling afraid something bad might happen;
- Getting scared all of a sudden and not knowing why;
- Being afraid of the dark; and
- Worrying about things.

These item-by-item findings indicate that male youths who have experienced maltreatment are more likely to have difficulties with sexual feelings, whereas females seem to experience more fear and anger-directed at both themselves and others. These findings suggest

hypotheses related to a gendered experience of PTSD and may indicate future research directions. Also, the findings support the moderation approach in considering all analyses separately by gender.

Substance Use

At one-year follow-up testing, MAP youth (grade 7-12 students across Ontario) were administered the 2005 Ontario Student Drug Use Survey (OSDUS; Adlaf & Paglia-Boak, 2005) questionnaire package. This instrument collects information on different health risk behaviours, such as substance use (see Appendix E for a sample of the items).

Using the same instrument in this epidemiological study of youth involved in child welfare provides the opportunity to compare the prevalence of different health risk behaviours, such as substance use between youth involved with child welfare and youth from the general population. Details on the OSDUS/OSDUHS study and questionnaire are covered in the following section.

Ontario Student Drug Use Survey

Sample

The OSDUHS, which changed its name from the Ontario Student Drug Use Survey (OSDUS) in 2007, has been conducted every two years since 1977 and is funded by the Centre for Addiction and Mental Health (CAMH). The survey samples grade 7-12 students from 42 school boards and 137 schools across Ontario, using a full-probability two-stage (school, class), stratified (region and school type), cluster design. The resulting sample represents about 975,200 students, with those from Northern Ontario being over sampled. The school, class, and student participation rates remain at about 90%, 71%, and 72%, respectively. All aspects of the OSDUS research were approved by the University of Toronto and CAMH's joint Research Ethics Board. To maximize questionnaire coverage, the OSDUS uses random half-samples for selected questionnaire items.

The OSDUS questionnaire is administered to youth in their high school classrooms by staff of the Institute for Social Research, York University.

Although data were collected from a representative sample of grade 7-12 Ontario students (N exceeds 7,000 students), the present analysis includes only those youth aged 15 to 19 ($M = 16.32$, $SD = 1.04$) who indicated they had never been involved with the child welfare system, resulting in a sample size of 3,505, 53% of it female. This sample was used to allow for comparisons of same-age groupings in light of age fluctuations in substance use, and to have a clearer estimate of substance use among youth not involved with child welfare (as system involvement itself may affect use).

Measures

The OSDUS questionnaire covers several different health risk behaviours; however, the current focus is primarily on substance use practices. OSDUS bases its substance use items on other major surveillance initiatives, such as the American annual high school Monitoring the Future Study (www.monitoringthefuture.org; Johnston et al., 2007). Substance use items include age of substance use initiation, frequency, quantity per use, and the severity/problematic consequences of substance use behaviours. Substances of interest include alcohol and cannabis, as well as "other drugs," which, because of their low prevalence of use, were collapsed into a single category in the analyses below. "Other drugs" include glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without a doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

Comparison between Samples

Both the MAP and the OSDUS used randomly selected epidemiological samples, with comparable demographics. The MAP Year-1 sample consisted of urban child welfare involved youth (61% female) 15 to 19 years of age ($M = 16.80$, $SD = .99$). The subsample from the 2005 OSDUS report consisted of non-child welfare involved youth (based on self-report; 53% female) in the same age range ($M = 16.32$, $SD = 1.04$). The substance use items compared in the current report are exactly matched across the two samples.

Analysis Plan

To assess the comparability between MAP and OSDUS youth on a single, given substance use item, relative risk ratios were calculated; the accompanying confidence intervals are provided. Relative risk is the risk of an event (or of developing a disease) relative to exposure. It is presented as a ratio of the probability of the event occurring in the exposed group versus the control (non-exposed) group. Relative risk is used frequently in the statistical analysis of binary outcomes where the outcome of interest has relatively low probability (Zhang & Yu, 1998). In a simple comparison between an experimental group and a control group, a relative risk (RR) of 1 means there is no difference in risk between the two groups. When relative risk presents as $RR < 1$, the event is less likely to occur in the experimental group than in the control group; $RR > 1$ means the event is more likely to occur in the experimental group than in the control group.

Whether a given relative risk can be considered statistically significant, that is, the confidence one has that a relative risk is not a consequence of chance, depends on the signal-to-noise ratio and the sample size. To this end, the 95% confidence intervals are

provided for each relative risk computation. The inclusion of 1.00 within the confidence interval nullifies the relevance of the relative risk because it suggests that the relative risk is equally likely to be non-existent, or its effect is in the opposite direction.

To elucidate the likelihood of substance use when a particular maltreatment experience was reported (self-report or by a caseworker) in the MAP study, the relative risk of (a) having been abused in a particular way and (b) perceiving oneself as being abused in a particular way for (c) using particular substances, is presented.

This report compares gender differences in substance use between MAP and OSDUS youth in two ways. First, the relative risk of substance use for MAP youth in relation to OSDUS youth was calculated separately for each gender. Second, the relative risk of substance use for males in relation to females was calculated separately.

To calculate the likelihood of (a) substance use, dichotomized as ever used in lifetime, ever used in past 12 months, and whether a frequent user (yes/no) given, and (b) the cumulative maltreatment score (i.e., the total number of types of maltreatment experienced), logistic regressions were used. These provided the odds ratios (OR) for (a) substance use given, and (b) cumulative maltreatment. This same method was used

when considering the association between (a) the cumulative substance use score (i.e., the total number of types of substances used), and (b) the type of maltreatment experienced.

Finally, to identify the gender-specific mechanism that mediates the relation between childhood maltreatment and substance use, a series of hierarchical multiple regression analyses were conducted to determine whether the hypothesized PTSD-mediated model fit Baron and Kenny's (1986) criteria for statistical mediation. However, to assess how child welfare youths' report of different maltreatment items on the CTQ cluster together, a principal component factor analysis with varimax rotation was conducted. This was deemed a necessary first step as the CTQ was not normed on child welfare adolescents and, as such, the reported 5-factor structure may not be valid. These results showed that for child welfare males, the CTQ subscales were relevant. However, for females, a 4-factor solution was obtained, the difference being that physical abuse and emotional abuse items loaded together (see Appendix E). Consequently, factor scores for maltreatment were used in these multiple regression analyses. We followed the multiple regression analyses testing mediation with further mediation tests - specifically, the Goodman test to conduct a formal assessment of statistical mediation.

CHAPTER 3: Results

OBJECTIVE 1

Using parallel substance use items drawn from the 2005 version of OSDUS and the MAP, what are the overall rates of substance use in the MAP sample and how do rates of substance use among MAP youth compare with Ontario youth who do not report some level of lifetime involvement with Ontario child welfare?

Findings from MAP and OSDUS Youth

The first set of analyses explored the overall rates of substance use in the MAP sample and examined differences between rates of substance use among youth participants in the MAP study compared with youth participants in the OSDUS study who reported no lifetime involvement with child welfare.

Table 1 depicts rates of self-reported substance use among youth in the MAP and OSDUS samples, showing percentage differences in reported use across the two samples. As maltreatment among OSDUS youth was not assessed, the OSDUS subsample used may include youth who have experienced maltreatment (but were not involved with Ontario child welfare). To better understand the reported proportions, the relative risk ratios were calculated. The highlighted relative risks are those considered interpretable as detailed in the analysis plan. Risk values indicating a substantial heightened risk (i.e., where the confidence interval had values above 1.0) were found for cannabis and other drugs.

Discussion of Findings

MAP youth are significantly less likely to use alcohol in the past year and, to a lesser extent, to have ever used alcohol. This finding may relate to access, among other things, as most MAP youth were in alternate care environments. Substances other than alcohol may be more likely to be acquired outside of the residential environment, at school, or through friends or previously established connections.

Alternatively, youth who have been involved with child welfare may potentially avoid alcohol due to early

experiences with parental alcohol use in which the negative consequences of drinking were particularly salient (i.e., parental intoxication co-occurred with parental abuse or neglect, see Wekerle & Wall, 2002). Perhaps, other drug use was either less frequent among parents or less salient (i.e., parents hid use of drugs from child's view, but not alcohol).

Finally, alcohol involvement may have been avoided due to the involvement of child welfare caseworkers. Caseworkers may be particularly alert to alcohol use and alcohol problems, given greater common knowledge. Without specific substance abuse training, workers may be less attuned to the effects of other drugs, making it easier for youth to hide cannabis and other substance use. Such speculations can be considered in future research on alcohol use and child welfare youth. However, it is advisable not to over-interpret the finding of a lesser risk of alcohol use, given that different results may emerge with a larger or different sample.

MAP youth were more likely than OSDUS youth to report lifetime and past-year cannabis use, lifetime other drug use, and frequent other drug use in the past year. Thus, youth involved with child welfare may deem drug use as more acceptable, more accessible, or better suited functionally to their coping needs.

The implications of these findings are that child welfare staff and caseworkers may not be as sensitive to the signs and symptoms associated with youth's use of these other drugs. Schools offering social work curricula provide a generalist degree, rather than specific child

Table 1

Youth Substance Use Patterns and Relative Risk of MAP Youth Compared with OSDUS Youth

SUBSTANCE USE	Prevalence (%)		Relative Risk of MAP Youth in Relation to OSDUS Youth	
	MAP (year 1) Youth (N=177)	2005 OSDUS (non-child welfare involved) Youth (N=3505)	RR	CI
Ever drink alcohol (life time)	65.52%	88.38%	0.74	0.67 – 0.83
Ever drink alcohol (last 12 months)	41.95%	85.18%	0.49	0.41 – 0.59
Frequent alcohol consumption (at least once a week)	20.69%	16.22%	1.28	0.94 – 1.72
Ever use cannabis (life time)	59.20%	46.97%	1.26	1.11 – 1.43
Ever use cannabis (last 12 months)	46.55%	40.60%	1.61	1.37 – 1.90
Frequent cannabis consumption (6+ last 12 months)	28.16%	23.37%	1.20	0.94 – 1.54
Ever use other drug* (life time)	28.57%	20.28%	1.40	1.10 – 1.81
Ever use other drug* (last 12 months)	20.24%	17.43%	1.16	0.85 – 1.58
Frequent other drug* consumption (6+ last 12 months)	3.57%	1.48%	2.41	1.05 – 5.53
Problematic drinking (8+ on the AUDIT Scale)	18.90%	26.39%	0.72	0.52 – 1.00
Problematic drug use (2+ on the CRAFFT Scale)	25.00%	24.50%	1.03	0.77 – 1.35

*Other drug: glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

RR=Relative Risk; CI=95% Confidence Interval

 Statistically significant

welfare training, and do not comprehensively cover mental health and addiction issues. When training in the child welfare setting, workers similarly do not receive strong support for addiction-related knowledge and a continuing education workshop is insufficient to provide required psychopharmacology, assessment, and interviewing skills. Knowledge dissemination and public health programming is primarily focused on alcohol use and the harms associated with binge drinking. Receiving far less attention in terms of prevention programming and popular media campaigns are cannabis and, to a greater extent, other drug use.

Although the public health focus on alcohol use and binge drinking responds to the needs of the general youth population where rates of past year alcohol use are much higher than rates of past-year cannabis use (Adlaf & Paglia-Boak, 2007; Johnston et al., 2007), the present findings suggest different needs for youth within

the child welfare system. In particular, to identify youth based on need and type of intervention (e.g., Drug Abuse Screening Test [DAST] for adolescents, Martino, Grilo, & Fehon, 2000), child welfare caseworkers could receive training to recognize signs and symptoms of drug use, as well as assessment tools, such as surveys and youth self-report questionnaires, for spotting drug use and problems.

While not shown in Table 1, analyses indicated no significant difference between MAP youth and OSDUS youth on self-reported past-year driving after drinking (i.e., driving after consuming two or more drinks of alcohol), or driving after marijuana use (i.e., driving within one hour of using cannabis). This latter finding is not emphasized, however, as there are no data comparing whether involvement with child welfare influences whether a youth obtained a driver's licence.

OBJECTIVE 2

Among youth in the MAP sample, what is the relationship between specific types of childhood maltreatment experienced and types of substance use? Is there an association among multiple forms of maltreatment and particular substances, or particular types of maltreatment and multiple substance types used?

Findings from the MAP

The second set of analyses examined the relationship between the type of childhood maltreatment reported by MAP youth and self-reported substance use. Both specific (i.e., specific maltreatment type, specific substance type) and general (i.e., multiple forms of maltreatment and specific substance type, multiple forms of maltreatment and multiple substance types) relationships were explored.

As shown in Table 2, rates of substance use were based on self-reports of severe levels (e.g physical and sexual abuse) based on items from the Childhood Experiences of Violence Questionnaire (CEVQ). These analyses were

limited to severe abuse experiences to approximate the child welfare threshold for defining and/or obtaining evidence related to maltreatment; such an approach has proved useful in studies with community samples (Wekerle & Wolfe, 1998) and child welfare samples (Wekerle et al., 2001). As such, physically abusive behaviours do not refer to spanking or slapping, even though these could be maltreatment events. We selected such behaviours as hitting, punching, biting, kicking, choking, scalding, or attacking in some way. For sexual abuse, flashing or exposure were not included. We selected such behaviours as fondling, being forced to touch in a sexual way, or having sex forced upon the child. For witnessing domestic

Table 2

The Likelihood of Substance Use across each Maltreatment Type

SUBSTANCE USE	Substance Use and Self-report Childhood Maltreatment Experience (MAP Initial, N=388)																	
	Childhood Experience of Violence Questionnaire						Childhood Trauma Questionnaire											
	Severe Physical Abuse (Ever/Never)		Witnessing Domestic Violence (Ever/Never)		Cumulative Maltreatment (0-3)		"I Believe that I was Physically Abused" (Ever/Never)		"I Believe that I was Sexually Abused" (Ever/Never)		"I Believe that I was Emotionally Abused" (Ever/Never)		"I Believe that I was Neglected" (Ever/Never)		Cumulative Maltreatment (0-4)			
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI		
Ever drink alcohol (life time)	2.19	1.02-4.67	1.01	0.60-1.69	1.55	1.02-2.35	1.94	1.17-3.22	1.17	0.93-1.48	1.21	0.88-1.68	1.46	1.10-1.95	1.51	0.89-1.50	1.50	1.14-1.97
Ever drink alcohol (last 12 months)	1.61	0.99-2.63	0.87	0.55-1.38	1.25	0.91-1.72	1.57	1.20-2.05	1.06	0.86-1.30	1.08	0.83-1.41	1.15	0.91-1.44	1.17	0.92-1.48	1.16	>1.00-1.34
Frequent alcohol consumption (at least once a week)	1.22	0.81-1.83	0.99	0.49-1.91	1.19	0.83-1.70	1.26	0.77-2.05	1.04	0.78-1.38	1.00	0.70-14.22	1.29	0.97-1.71	1.23	0.92-1.65	1.23	0.90-1.70
Ever use cannabis (life time)	2.20	1.22-3.96	1.27	0.76-2.11	1.52	1.09-2.13	1.68	1.13-2.51	1.07	0.88-1.31	1.20	0.92-1.58	1.24	0.99-1.55	1.14	0.91-1.44	1.23	0.98-1.54
Ever use cannabis (last 12 months)	2.02	1.27-3.22	1.31	0.82-2.11	1.59	1.16-2.17	1.54	1.20-1.99	1.11	0.91-1.34	1.03	0.81-1.32	1.20	0.97-1.48	1.18	0.95-1.47	1.22	1.06-1.41
Frequent cannabis consumption (6+ last 12 months)	1.50	1.05-2.16	1.07	0.68-1.68	1.19	0.90-1.57	1.10	0.77-1.58	1.02	0.84-1.24	1.15	0.90-1.47	1.22	0.99-1.51	1.26	1.01-1.57	1.12	0.90-1.40
Ever use other drug* (life time)	1.35	0.96-1.90	1.21	0.76-1.93	1.43	1.07-1.91	1.66	1.12-2.47	0.99	0.80-1.23	0.98	0.75-1.29	1.13	0.90-1.41	1.09	0.87-1.38	1.03	0.81-1.30
Ever use other drug* (last 12 months)	1.34	0.94-1.91	1.27	0.78-2.07	1.30	0.95-1.77	1.68	1.09-2.59	1.05	0.83-1.34	0.97	0.71-1.33	1.16	0.91-1.49	1.15	0.89-1.48	1.10	0.84-1.43
Frequent consumption of other drug (6+ last 12 months)	0.65	0.15-2.86	1.20	0.46-3.16	1.51	0.85-2.65	1.45	0.61-3.47	1.00	0.57-1.75	0.00	NA	1.21	0.72-2.03	1.37	0.82-2.27	1.07	0.58-1.97
Problematic drinking (8+ on the Audit Scale)	1.32	0.91-1.90	0.72	0.33-1.62	1.18	0.85-1.63	1.22	0.78-1.93	0.93	0.71-1.21	0.91	0.64-1.29	1.14	0.87-1.48	1.13	0.86-1.48	1.19	0.89-1.59
Problematic drug use (2+ on the CRAFFT Scale)	1.41	0.99-2.01	1.04	0.63-1.74	1.61	0.86-1.58	1.37	0.91-2.04	1.07	0.85-1.34	0.97	0.73-1.30	1.17	0.93-1.48	1.17	0.91-1.49	1.08	0.84-1.39

*Other drug: glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

OR=Odds Ratio

CI=95% Confidence Interval

Severe Physical Abuse: An adult choked, burned, or physically attacked youth in some way

Severe Sexual Abuse: Someone have sex with youth when youth didn't want them to or sexually force themselves on to youth in some other way

Witnessing Domestic Violence: Youth seen guardians hit each other or another adult at home

Statistically significant

violence, while witnessing verbal abuse may well be damaging, we selected only witnessing physical assault among adults in the home (i.e., physical assault involving parents, step-parents, or guardians; or a parent, step-parent, or guardian and another adult in the home). This approach also serves to maintain a definitional consistency with the MAP caseworker data, where caseworkers were required to dichotomously indicate (yes/no) whether there was substantiated maltreatment or substantial risk of maltreatment, as per Ontario law.

Table 2 also shows that a history of severe physical abuse and witnessing domestic violence is associated with a greater relative risk of substance use across a range of substances. MAP youth who reported severe physical abuse or witnessing domestic violence on the CEVQ are more likely to report lifetime and past year alcohol use, cannabis use, and other drug use, compared with youth with other maltreatment forms. For example, compared with youth without histories of severe physical abuse, those who reported severe physical abuse were at a 68% higher risk to report cannabis use in the past 12 months and 41% higher risk to report lifetime cannabis use. Findings also showed a greater relative risk of lifetime alcohol and other drug use among youth who had witnessed domestic violence. While not recorded in the table, the results also show that the number of types of severe maltreatment reported was associated with an 50-90% increased likelihood of lifetime and past-year alcohol use, cannabis use, and other drug use.

Among the four interpretive or perception-focused Childhood Trauma Questionnaire (CTQ) items (i.e., "I believe that I was..."), perceiving oneself as having been emotionally abused ("I believe that I was emotionally abused") was associated with greater relative risk of alcohol and cannabis use. Specifically, youth who believed that they were emotionally abused were at a 37% greater risk of reporting lifetime alcohol use, a 32% greater risk of reporting lifetime cannabis use, and a

116% greater risk of reporting problematic drinking. Also, the greater the number of perception-focused maltreatment items youth reported, the greater the likelihood (20% to 50%) of ever having used alcohol and cannabis.

In summary, youth who reported a history of severe physical abuse and witnessing domestic violence showed greater relative risk of reporting in the alcohol and cannabis categories. Youth with cumulative maltreatment scores were more consistently associated with alcohol and drug use, compared with scores pertaining to a single maltreatment type. Those who self-reported emotional abuse showed greater relative risk of lifetime alcohol and cannabis use, as well as greater risk of problematic drinking. In addition, the likelihood of ever reporting lifetime and past-year alcohol use, as well as past-year cannabis use, was higher among those who reported perceiving themselves as experiencing multiple forms of maltreatment, compared with those who reported single or fewer types of experiences.

MAP caseworker information on substantiated forms of maltreatment was obtained from a subsample of MAP youth ($n = 50$) at the time of intake. Table 3 shows substance use data among youth whose caseworkers reported a history of maltreatment compared with those from youth whose caseworkers did not report maltreatment history. These results, based on a smaller intake sample, should be considered preliminary but potentially suggest of patterns reflecting relationships between official detection of maltreatment type and type of substance use self-reported by youth. Although the sample size is small, this represents a good starting point for examining relationships between official detection of maltreatment and substance use. While the relative risk of workers' assessment on alcohol and substance use is mostly in the predicted direction, the result is not significant at conventional levels due to the small sample size.

Table 3

Workers' Assessment of MAP Youth Maltreatment Status (N =50)

SUBSTANCE USE (assessed during MAP initial testing)

	Substantiated Physically Abused (Yes/No)		Substantiated Sexually Abused (Yes/No)		Substantiated Emotionally Abused (Yes/No)		Substantiated Neglected (Yes/No)		
	Relative Risk	CI	Relative Risk	CI	Relative Risk	CI	Relative Risk	CI	
Alcohol	age of on-set before age 13	0.47	0.18 – 1.25	1.56	0.58 – 4.18	0.84	0.24 – 2.99	0.96	0.32 – 2.89
	frequent past 12 months (use weekly)	0.64	0.37 – 1.26	1.56	0.91 – 2.65	0.62	0.35 – 1.08	0.59	0.34 – 1.01
	freq past 30 days (daily use)	0.47	0.18 – 1.24	1.42	0.53 – 3.78	0.72	0.24 – 2.12	0.80	0.29 – 2.18
Binge Drink	age of on-set before age 13	0.32	0.07 – 1.49	0.67	0.09 – 4.93	0.46	0.11 – 1.83	0.86	0.20 – 3.71
	frequent past 12 months (40+)	0.50	0.19 – 1.33	1.66	0.63 – 4.38	0.53	0.20 – 1.45	1.64	0.42 – 6.34
	frequent past 30 days (4+)	0.42	0.08 – 2.15	3.54	0.81 – 15.50	0.39	0.08 – 1.86	1.60	0.20 – 12.61
Smoked Cigarettes	age of on-set before age 13	0.60	0.26 – 1.42	0.93	0.31 – 2.73	0.80	0.23 – 2.71	0.90	0.30 – 2.67
	frequent past 12 months (use weekly)	0.54	0.29 – 0.99	1.44	0.79 – 2.63	1.02	0.41 – 2.55	1.30	0.55 – 3.10
	frequent past 30 days (use daily)	0.56	0.32 – 1.00	1.21	0.66 – 2.20	0.90	0.45 – 1.80	1.12	0.56 – 2.24
Cannabis	age of on-set before age 13	0.30	0.06 – 1.42	1.40	0.31 – 6.33	0.42	0.10 – 1.69	NA	NA
	frequent past 12 months (6+)	0.56	0.28 – 1.13	1.79	0.93 – 3.45	0.63	0.29 – 1.31	1.09	0.45 – 2.66
	frequent past 30 days (daily use)	0.61	0.31 – 1.23	1.73	0.89 – 3.37	1.24	0.45 – 3.41	1.91	0.65 – 5.61
Other Drug*	ever in past 12 months	0.00	NA	0.00	NA	0.15	0.01 – 2.08	0.00	NA

***Other drug:** glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

CI=95% Confidence Interval

Discussion of Findings

The present results highlight physical and emotional abuse, as well as multiple forms of maltreatment, as contributing factors to youth substance use among child welfare teens, when youth self-reports are taken into account. When examining documented abuse (i.e., reported by caseworker), trends emerge for sexual abuse, which can be examined from an exploratory approach, considering potential clinical significance. Thus, it is suggested that youth whose caseworkers reported a history of sexual abuse were more likely to use alcohol and cannabis in the past year. This is consistent with previous findings from the literature indicating a significant association between childhood sexual abuse and alcohol and drug use (e.g., Dube et al., 2005; Moran et al., 2004). That childhood sexual abuse was associated with substance use with caseworker reports, but not youth self-reports, may be due to a reporting bias among youth. That is, youth may be less likely to self-report sexual abuse experiences and more likely to report physical or emotional abuse experiences, given the greater shame and guilt components suggested with sexual abuse (e.g., Wekerle et al., 2006). In addition, caseworker reports may be biased toward the most severe forms of childhood sexual abuse. Although the analyses of self-reported data involved severe sexual abuse, the most severe cases may be those detected by caseworkers and, within a small sample, it may be these individuals whose histories of childhood sexual abuse are most likely to predict adolescent substance use. To clarify these relationships, future research should pursue a comparison of caseworker reports of substantiated maltreatment alongside youth self-reports.

Although analyses did aggregate across caseworker reports of maltreatment types (0 = no maltreatment to 4 = positive on all forms of maltreatment), this cumulative score was not significantly associated with substance use in this small subsample. Similarly, since witnessing domestic violence and perceptions of abuse were not assessed by caseworker reports, no comparisons can be made between self-reports and caseworker reports for these types of maltreatment experiences. Again, interpretive caution is advised when considering non-significant results.

Further examination of the link between childhood maltreatment and substance use is clearly warranted. Specifically, understanding the mechanisms involved in the relationship will provide important information regarding prevention and intervention targets. The MAP is currently linking to participating agency databases to abstract the entered maltreatment codes per MAP youth. However, analyses involving MAP intake data will not enable comparisons between MAP youth and youth participants from the OSDUS due to differences in assessing substance use. When substance use information is collected at intake, questions are based on items compiled from both the Monitoring the Future Study (Johnston et al., 2007) and the Youth Risk Behavior Surveillance Study (Centers for Disease Control and Prevention, 2006). The MAP intake substance use items form a continuous measure of days or times of use during a specified period (last year, last month), as well as querying the age of onset of use.

To continue to look at the potential association between maltreatment and substance use among a sample of child welfare involved youth, we return to the MAP Year-1 dataset with substance use questions directly comparable to the OSDUS.

OBJECTIVE 3

How do rates of substance use differ for male and female youths in the MAP versus the OSDUS data?

Gender Differences in Substance Use: MAP vs. OSDUS

The third set of analyses examined whether there were any gender differences in substance use within the MAP and the OSDUS samples. Results for these analyses are shown in Table 4 (gender differences *between* MAP and OSDUS youth) and Table 5 (gender differences *within* the MAP and OSDUS samples). Results are considered preliminary considering the drop in sample size and power to detect significant differences when the data are split on gender.

Table 4 shows that, overall, there were few differences between MAP and OSDUS male youth. There were, though, several significant differences between groups for female youth. In contrast to female youth in the OSDUS sample, MAP females had a greater relative risk of lifetime cannabis and lifetime other drug use. In particular, past-year frequent other drug use appears to be over three times the risk for MAP females compared with OSDUS females.

As illustrated in Table 5, comparisons within the MAP and the OSDUS samples examine how males are faring compared with females (i.e., the relative risk of males). As can be seen for child welfare youth, few gender comparisons emerge. The only significant difference is for frequent cannabis consumption (six or more times/past year), where MAP males showed 70% greater likelihood than MAP females to use cannabis frequently in the past year.

In contrast to child welfare youth, there are several male-female differences among Ontario high school youth, all in the direction of greater male use. Ontario non-child welfare involved males reported greater substance use than females on: frequent alcohol

drinking; lifetime, past 12 months, and frequent cannabis use; lifetime and past year other drug use; greater hazardous drinking (i.e., more negative consequences); and greater problem drug use. This pattern of gender differences within samples raises the issue of child welfare females being a high risk group, since the gender pattern is opposite to the normative youth data.

To put into context the findings reported in Tables 4 and 5, Table 6 illustrates correlations between substance use and age for MAP youth participants only. For males, increased age was associated with more frequent alcohol use in the past 30 days, more frequent binge drinking in the past 12 months, and more frequent cannabis use in the past 12 months. For females, the majority of findings were in the opposite direction. That is, younger age was associated with more frequent cigarette smoking in the past 12 months and 30 days, and more frequent cannabis use in the past 12 months. Again, this points to MAP females being a relatively higher risk group.

Discussion of Findings

Male youth in the OSDUS reported increased involvement in alcohol, cannabis, and other drug use. These findings are consistent with other national epidemiologic surveys (e.g., www.monitoringthefuture.com; Johnston et al., 2007) in that male youth, particularly those in the 15-19 year age range, have higher levels of involvement in alcohol (e.g., increased binge drinking), cannabis, and other drug use. Findings from the most recent OSDUHS (Adlaf & Paglia-Boak, 2007) indicate few gender differences in substance use, but this may reflect inclusion of child welfare-involved youth in that sample (whereas child welfare-involved youth were excluded from the present OSDUS analyses), or fewer gender differences at the lower grades.

Table 4

Relative Risk of MAP Youth to Use Substances in Relation to OSDUS Youth in Male and Female Samples

SUBSTANCE USE	Relative Risk of MAP in Relation to OSDUS			
	Male (MAP N=85 / OSDUS N =1647)		Female (MAP N=92 / OSDUS N =1858)	
	Relative Risk	CI	Relative Risk	CI
Ever drink alcohol (lifetime)	0.79	0.67 – 0.93	0.87	0.78 – 0.96
Ever drink alcohol (last 12 months)	0.79	0.66 – 0.93	0.75	0.65 – 0.87
Frequent alcohol consumption (at least once a week)	0.50	0.25 – 1.01	1.36	0.86 – 2.14
Ever use cannabis (lifetime)	1.20	0.98 – 1.47	1.33	1.12 – 1.57
Ever use cannabis (last 12 months)	1.20	0.95 – 1.51	1.13	0.90 – 1.42
Frequent cannabis consumption (6+ last 12 months)	1.33	0.97 – 1.84	1.16	0.81 – 1.67
Ever use other drug* (lifetime)	1.42	0.97 – 2.06	1.40	>1.00 – 1.96
Ever use other drug* (last 12 months)	1.30	0.83 – 2.00	1.41	0.97 – 2.06
Frequent other drug* consumption (6+ last 12 months)	1.66	0.41 – 6.81	3.40	1.19 – 9.74
Problematic drinking (8+ on the AUDIT Scale)	0.75	0.47 – 1.19	0.73	0.47 – 1.14
Problematic drug use (2+ on the CRAFFT Scale)	1.06	0.71 – 1.59	1.03	0.70 – 1.50

*Other drug: glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

CI=95% Confidence Interval

 Statistically significant

Table 5

Relative Risk of Male Youth to Use Substances in Relation to Female Youth in MAP and OSDUS Samples

SUBSTANCE USE	Relative Risk of Male in Relation to Female			
	Male (MAP N = 177)		Female (OSDUS N = 3505)	
	Relative Risk	CI	Relative Risk	CI
Ever drink alcohol (lifetime)	0.91	0.75-1.09	1.00	0.98-1.03
Ever drink alcohol (last 12 months)	1.03	0.83-1.28	0.99	0.97-1.02
Frequent alcohol consumption (at least once a week)	0.64	0.28-1.47	1.83	1.56-2.13
Ever use cannabis (lifetime)	1.00	0.78-1.29	1.12	1.05-1.21
Ever use cannabis (last 12 months)	1.22	0.89-1.68	1.15	1.06-1.25
Frequent cannabis consumption (6+ last 12 months)	1.70	1.10-2.70	1.45	1.28-1.63
Ever use other drug* (lifetime)	1.23	0.77-1.97	1.18	1.03-1.34
Ever use other drug* (last 12 months)	1.11	0.64-1.91	1.22	1.06-1.41
Frequent other drug* consumption (6+ last 12 months)	0.78	0.14-4.16	1.67	0.97-2.90
Problematic drinking (8+ on the AUDIT Scale)	1.39	0.76-2.54	1.36	1.22-1.52
Problematic drug use (2+ on the CRAFFT Scale)	1.30	0.78-2.17	1.28	1.14-1.44

***Other drug:** glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor's prescription (other than cocaine), tranquilizers without a doctor's prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor's prescription.

CI=95% Confidence Interval

 Statistically significant

Table 6

The Relationship between Age and Substance Use

SUBSTANCE USE		Youth Age	
		Pearson Correlations	
		M (N=186)	F (N=202)
Alcohol	age of on-set	0.07	0.03
	frequency past 12 months	0.09	0.01
	frequency past 30 days	0.20 **	-0.01
Binge Drink	age of on-set	0.06	0.09
	frequency past 12 months	0.16 *	0.02
	frequency past 30 days	0.14	-0.02
Smoked Cigarettes	age of on-set	0.02	0.13
	frequency past 12 months	0.08	-0.22 **
	frequency past 30 days	0.02	-0.16 *
Cannabis	age of on-set	-0.10	0.23 **
	frequency past 12 months	0.21 **	-0.17 *
	frequency past 30 days	0.23	-0.11
Other Drug+	frequency past 12 months	0.08	-0.04
Cumulative Drug Used	# in past 12 months	0.12	-0.08

+ **Other drug:** glue and solvents (for sniffing), barbiturates, heroin, methamphetamines, stimulants without doctor’s prescription (other than cocaine), tranquilizers without a doctor’s prescription, LSD, PCP, hallucinogens other than LSD or PCP, cocaine, crack cocaine, ecstasy, and methylphenidate (Ritalin) without a doctor’s prescription.

*p < 0.05

**p < 0.01

M = Males

F = Females

That female youth in the MAP sample were more likely to report lifetime cannabis and lifetime and frequent other drug use suggests that child welfare adolescent females may be particularly likely to access drugs. The implication is that females involved with child welfare may be more involved in situations that place them at risk of interpersonal violence (e.g., involvement in drug trafficking resulting in greater exposure to weapons, threats and assaults; entering dangerous settings to procure drugs; having romantic partners that provide and/or use substances; being more likely to associate with substance using peers). These findings are consistent with Wolfe, Scott, Wekerle and Pittman (2001), who found that females with histories of maltreatment were more likely to be victims of violence than males, and reported a greater range of negative outcomes associated with their histories of maltreatment. Similarly, in their sample of male and female adolescent in-patients, Becker and Grilo (2006) found that a history of childhood abuse was associated with alcohol abuse for both males and females, but childhood abuse history was associated with drug abuse only for female adolescents.

The present findings also suggest some gender differences in the relationship between age and substance use. These findings are somewhat different from those documented in the 2007 OSDUHS (Adlaf & Paglia-Boak, 2007) in which results indicated few gender differences in the frequency of alcohol, cigarette, and cannabis use. There were, however, several significant differences in drug and alcohol use associated with grade in school, with overall rates increasing with increasing grade (Adlaf & Paglia-Boak, 2007). In the 2005 OSDUS analyses, we examined age differences by gender, which may account for some of the difference from the OSDUHS. We found that for male youth, frequent past-30-day alcohol use and frequent past-12-month cannabis use increased with increasing age. For female youth, however, frequent past-30-day and past-12-month cigarette smoking and frequent past 12-month cannabis use decreased with increasing age.

These findings may be due to a more restricted age range for the one-year MAP sample. The overall OSDUS results are based on a sample of youth across a greater age range (grades 7- 12). In addition, grade differences in use in the OSDUS sample are largest between grades 8 and 9, and MAP youth enter the study at an average age of 15.67 years, which approximates the age of grade 9 youth. Thus, the inconsistent findings may be due to youth entering the study past the age at which the greatest increases in substance use occurs.

Given that the majority of the significant relationships between substance use and age were weak in the present analyses, further research is needed to elucidate the specific relationships between age and substance use among male and female youth. Taken together, these findings suggest that the impact of adverse childhood experiences on substance use is more of a factor for females than males, highlighting the need for further research on the mechanisms underlying these relationships, as well as gender-specific screening and intervention strategies. To date, however, research concerning gender-specific adolescent interventions has been scarce.

One exception is a recent randomized controlled trial with adolescent girls of Seeking Safety (Najavits, 2002), a structured treatment intervention for women with substance use and post-traumatic stress disorder. Findings from this pilot study found favourable outcomes in terms of substance use disorder symptoms, substance-related consequences, and trauma symptoms associated with sexual distress and sexual concerns (Najavits, Gallop, & Weiss, 2006). Further research is needed to examine gender-specific intervention strategies and the most effective methods for working with both male and female child welfare involved adolescents.

OBJECTIVE 4

Given the significant link between childhood maltreatment and symptoms of PTSD, and the negative long-term consequences associated with PTSD symptoms, is there a significant gender-moderated mediation of the relationship between childhood maltreatment and substance use by PTSD symptomatology considering sub-clinical rather than disorder levels?

Childhood Maltreatment and Symptoms of PTSD: MAP Overall Rates and Gender Differences

No study to date has considered mediation in a child welfare sample with respect to teen substance use. The purpose of the final set of analyses was to examine symptoms of post-traumatic stress disorder (PTSD) among MAP youth, and to determine whether there was evidence to support gender-moderated mediation in the relationship between PTSD symptoms and childhood maltreatment.

The data that follows is based on the MAP youth at intake (N = 388). PTSD symptomatology was assessed using the Trauma Symptom Checklist for Children (TSCC; Briere, 1996). In the present report, severity of trauma symptoms is based on the number of scales on the TSCC that exceeded the clinical cut-off score. This method for determining trauma symptom severity includes youth who self-reported clinical levels in some areas of trauma symptoms (even if not all areas were reported). This reflects a symptom cluster approach, as opposed to a total score cut-off approach, and is consistent with a developmental traumatology perspective in which the overall PTSD picture may be sub-clinical, but chronically impairing in some domain. Although the measure used in the current study cannot be used as a substitute for clinician diagnosis of PTSD (i.e., based on diagnostic criteria outlined by the DSM-IV), symptoms reported on the TSCC may be used as a proxy for severity of trauma symptoms. The OSDUS does not query trauma symptoms; thus, the present consideration of mediators explores potential causal mechanisms among the child

welfare sample (MAP) only. These analyses may point to useful constructs to explore within community samples who report some lifetime child welfare involvement and a history of maltreatment.

Given that issues with MAP youth do not predominantly lie in the area of alcohol, but consistently in the cannabis area, the focus was on understanding the prediction of youth-reported cannabis use. Table 7 shows the results of the multiple regression analyses predicting past-year frequency of cannabis use. While there are differences in rates of non-cannabis use, seemingly due primarily to the contributions of female youth, the cannabis multiple regression results are presented with the proviso that a similar pattern is observed when other drug use is examined. Both cannabis and other drug categories appear to consistently emerge as substances where significant differences are found, particularly among females. On the other hand, no statistically significant relationship was observed between childhood maltreatment and substance use among male youth.

To capture this gender-specific effect, analyses presented here are based on MAP youth at intake, which represent a much larger sample size than the 1-year assessment analyses presented earlier in this report (i.e., MAP females at intake, n = 200). In the hierarchical multiple regression analyses we also control for youth age and child welfare status, entering these control variables before entering maltreatment variables in predicting the frequency of past-year cannabis use. To test mediation, PTSD is entered after maltreatment

Table 7

Predicting Female and Male Cannabis Use (Frequency) Past 12 Months from Number of TSCC Subscales that Exceeded Clinical Cut-off, Controlling for Emotional Abuse and other Maltreatment Factor Scores (Final Model)

MODEL		Coefficients		
		female (N=202) / male (N=186)		
		B (final)	SE	t
1	Age	-0.50/0.73	0.20/0.23	-2.48**/3.16**
2	Age	-0.54/0.73	0.25/0.24	-2.15**/3.08**
	Status: Crown Ward or not	0.11/0.09	0.64/0.68	0.17/0.14
	Status: Society Ward or not	-0.96/0.09	0.80/0.84	-1.20/0.11
3	Age	-0.62/0.79	0.24/0.24	-2.53**/3.31**
	Status: Crown Ward or not	-0.46/0.08	0.66/0.69	-0.71/0.11
	Status: Society Ward or not	-1.43/- 0.08	0.80/0.85	-1.79/-0.10
	Emotional-Physical Neglect Factor	0.35/-0.15	0.24/0.24	1.43/-0.63
	Male Emotional Abuse Factor (Emotional-Physical Abuse Factor for Female)	0.55/0.22	0.23/0.23	2.38*/0.99
	Physical Neglect Factor	0.06/-0.29	0.25/0.22	0.23/-1.29
	Physical Abuse Factor (Male Only)	N/A/0.35	N/A/0.26/	N/A/1.35
	Sexual Abuse Factor	0.22/-0.36	0.07/0.22	3.05**/-1.67
4	Age	-0.60/0.78	0.24/0.24	-2.46*/3.33**
	Status: Crown Ward or not	-0.38/-0.40	0.66/0.70	-0.58/0.56
	Status: Society Ward or not	-1.33/0.13	0.80/0.85	-1.66/0.16
	Emotional-Physical Neglect Factor	0.33/-0.11	0.24/0.24	1.37/-0.46
	Male Emotional Abuse Factor (Emotional-Physical Abuse Factor for Female)	0.43/0.11	0.25/0.23	1.74/0.47
	Physical Neglect Factor	-0.01/-0.37	0.25/0.23	-0.06/1.63
	Physical Abuse Factor (Male Only)	NA/0.27	NA/0.26	NA/1.05
	Sexual Abuse Factor	0.21/-0.42	0.25/0.22	0.82/-1.94*
	Number of TSCC subscales that exceeded clinical cut-off	0.61/0.36	0.09/0.20	6.95**/1.83

Dependent Variable: "In the last 12 months, how many times did you use cannabis?"

Female Overall Model R² =0.13; Male Overall Model R² =0.12

*p< 0.05

**p <0.01

B (final) = Beta coefficient final model

SE = Standard Error

t = t test

variables to be able to assess for a drop in significant prediction of maltreatment for substance use. As a means of comparison, male findings are also presented in Table 7.

As noted, preliminary analyses examining the factor structure of the Childhood Trauma Questionnaire (CTQ) for the MAP intake sample indicated a different factor structure for females compared with males (Appendix F). For females, four factors emerged, where physical abuse and emotional abuse items loaded on a single factor, and physical and emotional neglect items loaded together. It is unclear as to why this may occur. It may be that for females physical maltreatment is often accompanied by emotional maltreatment, or that females perceive the physical maltreatment to also be emotionally maltreating, or that females are more likely than males to also perceive the emotional maltreatment that issues from the perpetrator along with the physical maltreatment.

Following is the factor structure of maltreatment for MAP females:

- Factor 1: Physical Abuse & Emotional Abuse items
- Factor 2: Sexual Abuse
- Factor 3: Emotional Neglect & Physical Neglect (medical; no one to protect)
- Factor 4: Physical Neglect (not eat; parent drunk/high; wore dirty clothes)

The sexual abuse factor contained the same items for males as for females. For males, the discrete maltreatment categories may be more relevant. The factor structure for maltreatment for MAP males is:

- Factor 1: Physical Abuse
- Factor 2: Sexual Abuse
- Factor 3: Emotional Neglect and Physical Neglect
- Factor 4: Physical Neglect
- Factor 5: Emotional Abuse

Table 7 represents the regression results for both females and the males in the MAP sample, based on their intake data. The table shows two numbers separated by a slash, with the left number being the female result and the right number being the male result. In the model, step 1 shows that age is significant, indicating that younger MAP youth age is predicting frequency of past-year cannabis use for females. Interestingly, age holds as a significant factor across the regression, pointing to the concern around early entry into cannabis use. Step 2 shows that child welfare variables (e.g., status, Crown ward vs. not Crown ward) are not significant.

In step 3, the emotional-physical abuse factor (females) significantly predicts frequent past-year cannabis use, such that the more such maltreatment is experienced, the greater the number of times of past-year cannabis use. In the model, step 3 also shows that sexual abuse is significant for females only.

Step 4 shows that the TSCC information on the number of subscales exceeding the clinical elevation was entered, there by testing the mediation separately for females and for males. We see the diminishing significance of the sexual abuse for females, indicating that PTSD mediates the sexual abuse-cannabis use relationship. However, for males, sexual abuse becomes a significant predictor of frequency of cannabis use in the past 12 months, but only when PTSD symptoms are taken into account. This suggests a direct relationship for males: male sexual abuse histories directly predict cannabis use, when cannabis use is measured more along a continuum rather than a dichotomy.

Although the models in Table 7 predict a moderate amount of variance in the frequency of past-year cannabis use (i.e., 13% of variance accounted for in the female regression model; 12% of variance accounted for in the male regression model), the addition of

background and psychosocial variables would likely result in an increase in model R2. For example, Best et al. (2005) found that age of cannabis use initiation, spending time with mother, and spending time with drug-using friends accounted for 27% of the variance in current cannabis use. Inclusion of personality, genetic predisposition (i.e., family history of substance use) and peer network variables would likely enhance prediction of substance use in the current sample (Feldstein & Miller, 2006).

Prior adolescent research (Wekerle et al., 2001; Wolfe et al., 2001) shows more consistent PTSD mediation results for females. In a similar vein, consistent results were found for females in the multiple regression analyses. For females, there is mediation by PTSD symptoms of the physical-emotional factor in predicting frequency of past-year cannabis use. This is the first significant mediation model to be reported for child welfare involved females in predicting substance variables. These findings show that child welfare females emerge as a high-risk group, where earlier age of entry and greater cannabis use is of concern, and that PTSD symptomatology may be an explanatory variable. While the male sexual abuse-substance use link remains to be further considered, these findings taken together consistently identify young women within child welfare at high risk for problematic substance use.

Historically, there has been a “double standard” suggested, whereby female substance use and abuse has been under-valued as a salient issue for prevention, casework management and monitoring, and treatment (Wekerle & Wall, 2002). The importance of a gendered response to female substance use and gendered sensitivity or gender-specific treatment is articulated in the recent edited compilation on addiction in women (see Greaves & Poole, 2007). The high-risk status of young women is underscored in studies of homeless youth (Erickson, King et al., 2007; Leslie, 2007), which point to child welfare involvement

as prevalent among homeless youth struggling with substance, mental health, repeat pregnancy, and housing issues.

Discussion of Findings

The experience of maltreatment may be a single episode, or it may be a chronic pattern of interactions within the family. As noted above, research has documented the differing clinical features of a single-event versus chronic maltreatment (De Bellis, 2002b). Although not conducted with a random sampling of child welfare youth, prior research indicates that PTSD symptoms may function as a mediator between maltreatment and adolescent dating violence (Wekerle et al., 2001). The current report results suggest that trauma symptoms may provide the mechanism for linking additional negative outcomes with childhood maltreatment experiences, thereby highlighting PTSD symptoms as a potential broad target for reducing a range of adolescent problems. The present findings are consistent with the literature on PTSD symptoms and the self-medication hypothesis (e.g., Stewart & Israeli, 2002): substance use is used as a coping mechanism, albeit a maladaptive one, to reduce aversive affective and cognitive symptoms of trauma associated with a history of childhood maltreatment. Again, these findings have important assessment and intervention implications for child welfare involved youth.

Female youth should be carefully assessed for substance use and trauma symptomatology. Although general substance use reduction strategies are warranted among all child welfare involved youth, when a specific symptom profile is detected, tailored intervention approaches may be more effective for ensuring adequate care. Providing female youth with adaptive methods for coping with trauma symptoms may be an important entry into reducing negative outcomes, including substance use.

CHAPTER 4: Summary, Recommendations, Practice and Policy Implications

This is the first attempt to capture substance use levels among a randomly selected group of child welfare youth and compare the results with the general high school population. Furthermore, since youth from the general population were queried on lifetime child welfare involvement, it is likely that comparisons between the child welfare involved sample and the general population sample reflect true differences between youth whose maltreatment was officially detected (i.e., MAP youth who are identified based on child protective involvement and whose maltreatment histories are self-reported and verified by caseworker report) and non-system involved youth (i.e., OSDUS youth who self-report no child protective involvement).

It should be noted that a history of maltreatment was not assessed for the OSDUS sample. As a result, some of the non-system involved youth may have also experienced maltreatment. National epidemiological surveys with high school youth do not typically query maltreatment, and there is currently no available data on differences in substance use between youth who have experienced maltreatment and are involved with the child welfare system and those from high school samples. Further refinement of the present findings would include establishing groups based on maltreatment status (i.e., present or absent) within the high school group. This strategy is expected to occur in the 2009 OSDUHS cycle.

Several important findings emerged from the present analyses. First, youth who are involved in the child welfare system are more likely to report lifetime and past-year cannabis use, and are more likely to report lifetime and frequent other drug use (i.e., more than six times in the past year). Youth from the general high school population, however, were more likely to report lifetime and past-year use of alcohol. These findings may reflect greater access to alcohol among general populations. In the case of youth involved in child welfare, alcohol use and caseworker monitoring may

deter them from using alcohol, however, other substances (e.g., cannabis, cocaine, nonprescription opioids, Ritalin) may be perceived as more benign or less easily detected by caseworkers.

Within the MAP sample, a history of severe physical abuse, witnessing domestic violence, and believing that one had been neglected or emotionally abused were all associated with an increased likelihood of substances use. Only witnessing domestic violence was associated with an increased likelihood of other drug use. When workers' reports of abuse were examined, a history of sexual abuse was associated with a greater likelihood of more frequent past-year alcohol and cannabis use.

When gender differences were examined, female youth in the MAP study emerged as the group at greatest risk for substance use, *a trend that is the reverse of what is typically observed in the general high school population*. Females also emerged higher among samples of youth with histories of maltreatment, substance use, and other health consequences (i.e., violence victimization). Taken together, these findings suggest that females may be more susceptible to the effects of adverse childhood experiences on substance use than males, and that the specific mechanisms and strategies involved in preventing and intervening with child welfare involved youth should be gender-specific.

For females, it appears that sexual abuse histories as well as emotional/physical abuse are dominant predictors of frequency of cannabis and other drug use. Consistent with other analyses, sexual abuse is common in teenage youth, considering lifetime exposure (about 25% of MAP youth report some form of sexual abuse)-and it is predictive of drug use. Emotional/physical abuse is not considered in the substance literature as much as sexual abuse, and other drugs not considered as much as alcohol.

As suggested by developmental traumatology theory, PTSD symptomatology emerges as a significant mediator of drug use (cannabis, other drugs), which is in keeping with other prior research on teens (Wekerle et al., 2001). This finding points to the potential value of addressing PTSD symptoms in adolescence, even though the maltreatment experience may have terminated in childhood. Other factors, such as exposure to dangerous places and persons, potentially in connection with the drug-procuring and drug-using activities, may contribute to an ongoing activation of PTSD symptoms. Ongoing traumatic events in the lives of child welfare youth, especially females, seem to warrant further investigation.

Overall, these analyses highlight the need for thoroughly assessing youth at the earliest possible age, with the possibility of averting the initiation of substance use. In addition, given the greater engagement with drugs among MAP youth, assessment of substance use involvement should be broadened. There is clearly a need to promote drug abuse prevention among youth involved in child welfare. These youth emerge as a sub-population of particular interest to drug educators and treatment providers, and represent an at-risk, priority group for the prevention and treatment of substance use disorders. Specific recommendations for public health policy and practice are presented below.

RECOMMENDATION 1

Promote the early detection and screening of substance use for youth with a history of maltreatment.

Early initiation of substance use and abuse is a potential concern for adolescents with a history of childhood maltreatment. Screening for substance use in early adolescence with youth who have been maltreated should be conducted by skilled health professionals to facilitate early identification, family safety and adolescent well-being. For males and females, early intervention may support better adaptation to adversity, and may help set the stage for a healthier lifestyle in adulthood.

RECOMMENDATION 2

Develop tailored and targeted substance use prevention programs for youth who have a history of maltreatment.

The current findings highlight the need to allocated resources toward the development of targeted prevention programs for youth with a history of maltreatment who are at-risk of engaging in substance use. Unfortunately, current universal prevention programs that target all youth (e.g., school-based prevention programs) may not be sufficient to address the needs of those youth who have been maltreated and most at risk.

It is important to recognize that youth with a history of maltreatment may require multifaceted treatment approaches that are sensitive to their trauma backgrounds. The sequences of the trauma-based and substance abuse therapeutic targets is a clinical issue and may require case-by-case evaluation, and may be complicated further by other co-occurring factors, such as teen dating violence and other mental health issues (Wekele & Wall, 2002). However, some authors have posited that, as long as underlying maltreatment issues are unresolved, it is unlikely that substance abuse and other problem behaviors can be prevented or treated (Watts & Ellis, 1993).

RECOMMENDATION 3**Continue to monitor and identify risk and protective factors of substance use patterns among youth who have been maltreated.**

This study represents only a preliminary investigation of substance use differences between youth involved in child welfare and high school adolescents. The present findings highlight the need for continued monitoring of substance use patterns and trajectories among samples of Ontario youth who have experienced maltreatment. Further research is needed to determine the extent to which adolescent predictors of substance use among child welfare youth (e.g., gender, maltreatment status) also predict long-term substance use, requiring the use of longer-term repeated measures data. It would be important to consider similar prospective longitudinal data in sub-populations within child welfare, such as Aboriginal youth, youth with other mental health issues (e.g., mood and anxiety disorders), and youth in care.

In addition, a more in-depth analysis of risk and protective factors is needed among youth who have experienced maltreatment. Although rates of substance use are higher among youth with histories of maltreatment compared with the general population, not all youth with such histories will develop a substance use disorder. Identifying protective factors that differentiate between youth whose trajectories include substance use/abuse versus those who maintain normative levels of licit drug use into adulthood would provide important information concerning targets for health promotion and prevention programming.

RECOMMENDATION 4**Provide additional training for child welfare workers and health practitioners.**

Additional training and education that focuses on youth with a history of child maltreatment and substance use is needed within child welfare agencies and pre-service professional school programming (e.g., social work). It is critical that caseworkers within child welfare and addiction specialists who work with youth who have experienced maltreatment understand the cluster of issues associated with maltreatment and how they are linked with substance use and related outcomes over time. For example, training should extend beyond identifying existing substance use disorders for those with a history of maltreatment, and start with services aimed at prevention (e.g., delivering age-appropriate messages). It should also extend beyond substances most commonly used by the general population of youth (i.e., alcohol) to substances most likely to be used by child welfare involved youth in Ontario (e.g., cannabis and other drugs). Training and education should also be made available to group home staff, foster parents, and other professionals with whom youth spend most of their time and who have access to a greater sampling of youths' behaviour.

Training should also include ongoing continuing education on both maltreatment and substance use/abuse. As well, cross-training in both areas is important since treating maltreatment and substance use has been shown to be most effective when treated simultaneously within an integrated treatment program (Kofed, Friedman & Peck, 1993).

RECOMMENDATION 5

Improve collaboration and communication among systems.

To effectively address the complex and multiple factors associated with maltreatment and substance use integrated, collaborative and multi-sectoral approaches are needed to ensure continuity of care. Given the range of issues these youth could potentially face it is important that there is improved collaboration and communication among systems (i.e. health, justice, mental health). Strengthening the relationship among these systems will necessitate a high level of coordination and collaboration. As well, intensive levels of care and gender specific treatment programming need to be further developed and evaluated for effectiveness.

References

- Adlaf, E. M., & Paglia-Boak, A. (2005). *Drug Use Among Ontario Students, 1977-2005: Detailed OSDUS Findings* (CAMH Research Document No. 16). Toronto, ON: Centre for Addiction and Mental Health.
- Adlaf, E. M., & Paglia-Boak, A. (2007). *Drug Use Among Ontario Students, 1977-2007: Detailed OSDUHS Findings* (CAMH Research Document No. 20). Toronto, ON: Centre for Addiction and Mental Health.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition*. Washington, DC: American Psychiatric Association.
- Annenberg Commission on Adolescent Substance Abuse (2005). Prevention of substance abuse disorders. In Evans et al. (Eds.), *Treating and Preventing Adolescent Mental Health Disorders: What We Know and What We Don't Know* (pp. 411-426). New York: Oxford University Press.
- Arsenault, L., Cannon, M., Witton, J., & Murray, R. M. (2004). Causal association between cannabis and psychosis: Examination of the evidence. *British Journal of Psychiatry, 184*, 110-117.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.
- Battin-Pearson, S., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F., & Hawkins, J. D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92*(3), 568-582.
- Becker, D. F., & Grilo, C. M. (2006). Prediction of drug and alcohol abuse in hospitalized adolescents: Comparisons by gender and substance type. *Behaviour Research and Therapy, 44*, 1431-1440.
- Bernstein, D. P., & Fink, L. (1998). *Childhood Trauma Questionnaire: A Retrospective Self-report Manual*. San Antonio, TX: The Psychological Corporation.
- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., et al. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry, 151*, 1132-1136.
- Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse and Neglect, 27*, 169-190.
- Best, D., Gross, S., Manning, V., Gossop, M., Witton, J., & Strang, J. (2005). Cannabis use in adolescents: The impact of risk and protective factors and social functioning. *Drug and Alcohol Review, 24*, 483-488.
- Briere, J. (1996). *Professional Manual for the Trauma Symptom Checklist for Children (TSCC)*. Odessa, FL: Psychological Assessment Resources, Inc.
- Brook, J. S., Balka, E. B., & Whiteman, M. (1999). The risks for late adolescence of early adolescent marijuana use. *American Journal of Public Health, 89*, 1549-1554.
- Canadian Centre on Substance Abuse (CCSA) (2007). *A Drug Prevention Strategy for Canada's Youth*. Ottawa, ON: CCSA.
- Carrion, V. G., Weems, C. F., Ray, R., & Reiss, A. L. (2002). Toward an empirical definition of pediatric PTSD: The phenomenology of PTSD symptoms in youth. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*(2), 166-173.
- Cash, S. J., & Wilke, D. J. (2003). An ecological model of maternal substance abuse and child neglect: Issues, analyses and recommendations. *American Journal of Orthopsychiatry, 73*, 392-404.

- Centers for Disease Control and Prevention (2006). Youth risk behavior surveillance—United States, 2005. *Surveillance Summaries*. MMWR 2006; 55 (No. SS-5).
-
- Clark, D. B., Pollock, N., Bukstein, O. G., Mezzich, A. C., Bromberger, J. T., Donovan, J. E. (1997). Gender and comorbid psychopathology in adolescents with alcohol dependence. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(9), 1195-1203.
-
- Clark, D. B., Thatcher, D. L., & Maisto, S. A. (2004). Adolescent neglect and alcohol use disorders in two-parent families. *Child Maltreatment*, 9, 357-370.
-
- Crozier, J. C., & Barth, R. P. (2005). Cognitive and academic functioning in maltreated children. *Children & Schools*, 27, 197-207.
-
- De Bellis, M. D. (2002a). Abuse and ACTH response to corticotropin releasing factor. *American Journal of Psychiatry*, 159(1), 157.
-
- De Bellis, M. D. (2002b). Developmental traumatology: A contributory mechanism for alcohol and substance use disorders. *Psychoneuroendocrinology*, 27, 155-170.
-
- Dembo, R., Williams, L., Wothke, W., & Schmeidler, J. (1992). Examining a structural model of the relationships among alcohol use, marijuana/hashish use, their effects, and emotional and psychological problems over time in a cohort of high-risk youths. *Deviant Behavior*, 13(2), 185-215.
-
- Deykin, E. Y., & Buka, S. L. (1997). Prevalence and risk factors for posttraumatic stress disorder among chemically dependent adolescents. *American Journal of Psychiatry*, 154, 752-757.
-
- Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence. *Journal of Consulting and Clinical Psychology*, 53, 890-904.
-
- Dube, S. R., Anda, R. F., Whitfield, C. L., Brown, D. W., Felitti, V. J., Dong, M., & Giles, W. H. (2005). Long-term consequences of childhood sexual abuse by gender of victim. *American Journal of Preventative Medicine*, 28, 430-438.
-
- Dyregrov, A., & Yule, W. (2006). A review of PTSD in children. *Child and Adolescent Mental Health*, 11(4), 176-184.
-
- Erickson, P. G., King, K., & Young Women In Transit (YWIT) (2007). On the street: Influences on homelessness in young women. In L. Greaves & N. Poole (Eds.), *Highs and Lows: Canadian Perspectives on Women and Substance Use* (pp. 51-58). Toronto, ON: Centre of Addiction and Mental Health.
-
- Feldstein, S. W., & Miller, W. R. (2006). Substance use and risk-taking among adolescents. *Journal of Mental Health*, 15, 633-643.
-
- Garland, A. F., Hough, R. L., McCabe, K. M., Yeh, M., Wood, P. A., & Aarons, G. A. (2001). Relevance of psychiatric disorders in youth across five sectors of care. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 409-418.
-
- Grant, B. F., & Dawson, D. A. (1997). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence. *Journal of Substance Abuse*, 9, 103-110.
-
- Greaves, L., & Poole, N. (2007). Introduction. In L. Greaves & N. Poole (Eds.), *Highs and Lows: Canadian Perspectives on Women and Substance Use* (pp. xix-xxv). Toronto, ON: Centre for Addiction and Mental Health.

Higgins, D. J., & McCabe, M. P. (2001). Multiple forms of child abuse and neglect: Adult retrospective reports. *Aggression and Violent Behavior, 6*, 547-578.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2007). *Monitoring the Future National Survey Results on Drug Use, 1975-2006. Volume I: Secondary School Students* (NIH Publication No. 07-6205). Bethesda, MD: National Institute on Drug Abuse.

Kilpatrick, D. G., Ruggiero, K. J., Acierno, R., Saunders, B. E., Resnick, H. S., & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: Results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology, 71*(4), 692-700.

King, K. M., & Chassin, L. (2007). A prospective study of the effects of age of initiation of alcohol and drug use on young adult substance dependence. *Journal of Studies on Alcohol and Drugs, 68*, 256-265.

Kofed, L., Friedman, M.J., Peck, R., (1993). Alcoholism and Drug Abuse in Patients with PTSD. *Psychiatric Quarterly, 64*(2), Summer 1993, 151-171.

Koob, G. F. (1999). Corticotropin-releasing factor, norepinephrine, and stress. *Biological Psychiatry, 46*, 1167-1180.

Knight, J. R., Shrier, L. A., Bravender, T. D., Farrell, M., Bilt, V., & Shaffer, H. J. (1999). A new brief screen for adolescent substance abuse. *Archives of Pediatrics and Adolescent Medicine, 153*(6), 591-596.

Leslie, B. (2007). After care ends: Pregnant pathways. *Ontario Association of Children's Aid Societies Journal, 51*(4), 17-26.

Liepman, M. R., Calles, J. L., Kizilbash, L., Nazeer, A., & Sheikh, S. (2002). Genetic and nongenetic factors influencing substance use by adolescents. *Adolescent Medicine, 13*(2), 375-401.

Locke, T. F., & Newcomb, M. (2004). Child maltreatment, parent alcohol- and drug-related problems, polydrug problems, and parenting practices: A test of gender differences and four theoretical perspectives. *Journal of Family Psychology, 18*, 120-134.

Luster, T., & Small, S. A. (1997). Sexual abuse history and problems in adolescence: Exploring the effects of moderating variables. *Journal of Marriage and the Family, 59*, 131-142.

Martino, S., Grilo, C. M., & Fehon, D. C. (2000). Development of the drug abuse screening test for adolescents (DAST-A). *Addictive Behaviors, 25*, 57-70

Mayes, L. C. & Bornstein, M. H. (1996). The context of development for young children from cocaine-abusive families. In P. M. Kato & T. Mann (Eds.), *Handbook of Diversity Issues in Health Psychology* (pp. 69-95). New York: Plenum Press.

Moran, P. B., Vuchinich, S., & Hall, N. K. (2004). Associations between types of maltreatment and substance use during adolescence. *Child Abuse and Neglect, 28*, 565-574.

Najavits, L. M. (2002). *Seeking Safety: A Treatment Manual for PTSD and Substance Abuse*. New York: Guilford.

Najavits, L. M., Gallop, R. J., & Weiss, R. D. (2006). Seeking safety therapy for adolescent girls with PTSD and substance use disorder: A randomized controlled trial. *Journal of Behavioral Health Services and Research, 33*, 453-463.

National Institute of Health (2004). *Marijuana: Facts for Teens* (Publication No. 04-4037). Retrieved December 10, 2007 from: www.nida.nih.gov/MarijBroch/Marijteens.html

National Institute on Drug Abuse (February 2008). *Drugs, Brain, and Behavior – The Science of Addiction*. Retrieved February 28, 2008 from: www.drugabuse.gov/scienceofaddiction/brain.html

Putnam, F. W. (1998). Trauma models of the effects of childhood maltreatment. *Journal of Aggression, Maltreatment & Trauma, 2*(1), 51-66.

Roberts, R. E., Roberts, C. R., & Xing, Y. (2007). Comorbidity of substance use disorders and other psychiatric disorders among adolescents: Evidence from an epidemiologic survey. *Drug and Alcohol Dependence, 88*, S4-S13.

Rohde, P., Lewinsohn, P. M., & Seeley, J. R. (1996). Psychiatric comorbidity with problematic alcohol use in high school students. *Journal of the American Academy of Child & Adolescent Psychiatry, 35*(1), 101-109.

Saunders, J. B., Aasland, O. G., Babor, T. F., & de la Fuente, J. R. (1993). Development of the alcohol use disorder identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption: II. *Addictions, 88*(6), 791-804.

Schuckit, M. C. (2000). Genetics of the risk for alcoholism. *The American Journal on Addictions, 9*(2), 103-112.

Schulenberg, J. E., & Maggs, J. L. (2002). A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol, (Suppl. 14)*, 54-70.

Stewart, S. H. (1996). Alcohol abuse in individuals exposed to trauma: A critical review. *Psychological Bulletin, 120*(1), 83-112.

Stewart, S. H., & Israeli, A. L. (2002). Substance abuse and co-occurring psychiatric disorders in victims of intimate violence. In C. Wekerle & A.-M. Wall (Eds.), *The Violence and Addiction Equation: Theoretical and Clinical Issues in Substance Abuse and Relationship Violence* (pp. 98-122). New York: Brunner-Routledge.

Tolin, D. F., & Foa, E. B. (2002). Gender and PTSD: A cognitive model. In R. Kimerling et al. (Eds.), *Gender and PTSD* (pp. 76-97). New York: Guilford Press.

Townsend, L., Flisher, A. J., & King, G. (2007). A systematic review of the relationship between high school dropout and substance use. *Clinical Child and Family Psychology, 10*, 295-317.

Tucker, J. S., Ellickson, P. L., & Klein, D. J. (2003). Predictors of the transition to regular smoking during adolescence and young adulthood. *Journal of Adolescent Health, 32*(4), 314-324.

Wall, A. E., & Kohl, P. L. (2007). Substance use in maltreated youth: Findings from the National Survey of Child and Adolescent Well-Being. *Child Maltreatment, 12*, 20-30.

Walsh, C., MacMillan, H., Trocmé, N., Dudziuk, J., & Boyle, M. (2000). *Psychometric properties of the childhood experiences of violence questionnaire*. Paper presented at Victimization of Children and Youth: An International Research Conference: Durham, NH.

Walsh, C., MacMillan, H. L., & Jamieson, E. (2003). The relationship between parental substance abuse and child maltreatment: Findings from the Ontario Health Supplement. *Child Abuse and Neglect, 27*, 1409-1425.

Walsh, C. A., MacMillan, H. L., Trocmé, N., Jamieson, E., & Boyle, M. (2008). Measurement of victimization in adolescence: Development and validation of the Childhood Experiences of Violence Questionnaire. *Journal of Child Abuse and Neglect, (32)*11:1037-1058.

Watts, D., & Ellis, A.M. (1993). Sexual abuse and drinking and drug use: Implications for prevention. *Journal of Drug Education, 23*, 183-200.

Wekerle, C., MacMillan, H. L., Leung, E., & Jamieson, E. (2007). Childhood maltreatment. In M. Hersen & A. Gross (Eds.), *Handbook of Clinical Psychology: Volume 2, Children and Adolescents* (pp. 856-903). Hoboken, NJ: John Wiley & Sons.

Wekerle, C., Miller, A. L., Wolfe, D. A., & Spindel, C. (2006). *Childhood Maltreatment: Advances in Psychotherapy: Evidence-Based Practice*. Cambridge, MA: Hogrefe and Huber.

Wekerle, C., & Wall, A.-M. (2002). The overlap between intimate violence and substance abuse. In C. Wekerle & A.-M. Wall (Eds.), *The Violence and Addiction Equation: Theoretical and Clinical Issues in Substance Abuse and Relationship Violence* (pp. 1-24). New York: Brunner-Routledge.

Wekerle, C., Wall, A.-M., Leung, E., & Trocmé, N. (2007). Cumulative stress and substantiated maltreatment: The importance of caregiver vulnerability and adult partner violence. *Child Abuse & Neglect, 31*, 427-443.

Wekerle, C., & Wolfe, D. A. (1998). The role of child maltreatment and attachment style in adolescent relationship violence. *Development and Psychopathology, 10*, 571-586.

Wekerle, C., Wolfe, D. A., Hawkins, D. L., Pittman, A.-L., Glickman, A., & Loyal, B. E. (2001). The value and contribution of youth self-reported maltreatment history to adolescent dating violence: Testing a trauma mediational model. *Development and Psychopathology, 13*, 847-871.

Widom, C. S., Ireland, T., & Glynn, P. J. (1995). Alcohol abuse in abused and neglected children followed-up: Are they at increased risk? *Journal of Studies on Alcohol, 56*(2), 207-217.

Williams, S., MacMillan, H., & Jamieson, E. (2006). The potential benefits of remaining in school on the long-term mental health functioning of physically and sexually abused children: Beyond the academic domain. *American Journal of Orthopsychiatry, 76*(1), 18-22.

Wolfe, D. A., Scott, K., Wekerle, C., & Pittman, A. (2001). Child maltreatment: Risk of adjustment problems and dating violence in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 282-298.

Wolfe, D. A., Wekerle, C., Scott, K., Straatman, A.-L., & Grasley, C. (2004). Predicting abuse in adolescent dating relationships over 1 year: The role of child maltreatment and trauma. *Journal of Abnormal Child Psychology, 113*, 406-415

Zhang, J., & Yu, K. F. (1998). What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. *Journal of the American Medical Association, 280*, 1690-1691.

Appendix A: MAP Childhood Trauma Questionnaire (CTQ) (Sample)

MAP Childhood Trauma Questionnaire

Questionnaire Items used for analyses in the current report: Please note, the full questionnaire including all the response options are not given, but rather a sampling.

CTQ

(Bernstein, D. P. Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., et al. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. American Journal of Psychiatry, 151, 1132-1136.)

These questions ask about some of your experiences growing up as a child. Although these questions are of a personal nature, please try to answer as honestly as you can. For each question, fill in the box that best describes how you feel.

Please note: The sample items contained in these appendices are for educational purposes only. They are included to assist the reader in understanding the nature of the youth self-report data. All are published questionnaires, with reported satisfactory psychometric properties. The CEVQ is a no-charge instrument. The CTQ and TSCC are commercial tests, with the copyright held by the companies Pearson (www.psychcorp.co.uk/product.aspx?n=1316&s=1320&cat=1417&skey=2677) and PAR (www3.parinc.com/products/product.aspx?Productid=TSCC), respectively.

When I was growing up...	Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.					
2. I knew that there was someone to take care of me and protect me.					
3. People in my family called me things like "stupid," "lazy," or "ugly".					
4. My parents were too drunk or high to take care of the family.					
5. There was someone in my family who helped me feel that I was important or special.					
6. I had to wear dirty clothes.					
7. I felt loved.					
8. I thought that my parents wished I had never been born					
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.					
10. There was nothing I wanted to change about my family					
11. People in my family hit me so hard that it left me with bruises or marks.					
12. I was punished with a belt, a board, a cord, or some other hard object.					

Appendix B: MAP Childhood Experiences of Violence Questionnaire (CEVQ) (Sample)

MAP Childhood Experiences of Violence Questionnaire (CEVQ)
 Questionnaire Items used for analyses in the current report: Please note, the full questionnaire including all the response options are not given, but rather a sampling.

CEVQ
 (Wekerle, C., Miller, A.L., Wolfe, D.A., & Spindel, C. (2006). *Childhood Maltreatment: Advances in Psychotherapy: Evidence-Based Practice*. Cambridge, MA: Hogrefe and Huber Publishers.)
 (Walsh, C. A., MacMillan, H. L., Trocmé, N. Dudziuk, J., & Boyle, M. (2000). *Psychometric properties of the childhood experiences of violence questionnaire*. Victimization of children and youth: An International Research Conference, Durham, NH.)

This questionnaire asks about things that may have happened to you in your school, in your neighbourhood, or in your family. It will ask questions about some situations where you might have been hurt or afraid you were going to get hurt. All your answers will be kept strictly confidential. All your answers are private. We will not tell your parents, teachers, or anyone else about anything you have answered on this form. If you need help or would like to talk to someone about any of these experiences you can call Kid’s Help Phone at 1-800-668-6868 or you can call any of the numbers listed on the information sheet you will be given.

1. Sometimes kids get hassled or picked on by other kids who say hurtful or mean things to them.		
How many times has this happened to you? (If never, go to question 2).	a. When did this happen? Please mark all that apply.	b. Who did this to you? Please mark all that apply.
<input type="checkbox"/> Never	<input type="checkbox"/> Before grade school	<input type="checkbox"/> Brother/Sister/Stepbrother/Stepsister
<input type="checkbox"/> 1 to 2 times	<input type="checkbox"/> In grades 1 to 5	<input type="checkbox"/> Kids at school
<input type="checkbox"/> 3 to 5 times	<input type="checkbox"/> In grade 6 to 8	<input type="checkbox"/> Kids in your neighbourhood
<input type="checkbox"/> 6 to 10 times	<input type="checkbox"/> In high school	<input type="checkbox"/> Boyfriend/Girlfriend
<input type="checkbox"/> More than 10 times	<input type="checkbox"/> Is happening now	<input type="checkbox"/> Other, Who?

2. Sometimes kids get pushed around, hit or beaten up by other kids or a group of kids.		
How many times has this happened to you? (If never, go to question 3).	a. When did this happen? Please mark all that apply.	b. Who did this to you? Please mark all that apply.
<input type="checkbox"/> Never	<input type="checkbox"/> Before grade school	<input type="checkbox"/> Brother/Sister/Stepbrother/Stepsister
<input type="checkbox"/> 1 to 2 times	<input type="checkbox"/> In grades 1 to 5	<input type="checkbox"/> Kids at school
<input type="checkbox"/> 3 to 5 times	<input type="checkbox"/> In grade 6 to 8	<input type="checkbox"/> Kids in your neighbourhood
<input type="checkbox"/> 6 to 10 times	<input type="checkbox"/> In high school	<input type="checkbox"/> Boyfriend/Girlfriend
<input type="checkbox"/> More than 10 times	<input type="checkbox"/> Is happening now	<input type="checkbox"/> Other, Who?
c. Have you ever seen a doctor because of this? <input type="checkbox"/> Yes <input type="checkbox"/> No		

3. How many times have you ever seen or heard any one of your parents (step-parents or guardians) say hurtful or mean things to each other or to another adult in your home.

How many times has this happened to you? (If never, go to question 4).	a. When did this happen? Please mark all that apply.
<input type="checkbox"/> Never	<input type="checkbox"/> Before grade school
<input type="checkbox"/> 1 to 2 times	<input type="checkbox"/> In grades 1 to 5
<input type="checkbox"/> 3 to 5 times	<input type="checkbox"/> In grade 6 to 8
<input type="checkbox"/> 6 to 10 times	<input type="checkbox"/> In high school
<input type="checkbox"/> More than 10 times	<input type="checkbox"/> Is happening now

Was the person who did this drinking alcohol at the time? Yes No Don't Know
 Was the person who did this using drugs at the time? Yes No Don't Know

4. How many times has any one of your parents (step-parents or guardians) said hurtful or mean things to you?

How many times has this happened to you? (If never, go to question 5).	a. When did this happen? Please mark all that apply.
<input type="checkbox"/> Never	<input type="checkbox"/> Before grade school
<input type="checkbox"/> 1 to 2 times	<input type="checkbox"/> In grades 1 to 5
<input type="checkbox"/> 3 to 5 times	<input type="checkbox"/> In grade 6 to 8
<input type="checkbox"/> 6 to 10 times	<input type="checkbox"/> In high school
<input type="checkbox"/> More than 10 times	<input type="checkbox"/> Is happening now

Was the person who did this drinking alcohol at the time? Yes No Don't Know
 Was the person who did this using drugs at the time? Yes No Don't Know

5. How many times has an adult spanked you with their hand on your bottom (bum), or slapped you on your hand.

How many times has this happened to you?	a. When did this happen? Please mark all that apply.	b. Who did this to you? Please mark all that apply.
<input type="checkbox"/> Never	<input type="checkbox"/> Before grade school	<input type="checkbox"/> Father
<input type="checkbox"/> 1 to 2 times	<input type="checkbox"/> In grades 1 to 5	<input type="checkbox"/> Mother
<input type="checkbox"/> 3 to 5 times	<input type="checkbox"/> In grade 6 to 8	<input type="checkbox"/> Step-father/Mother's boyfriend
<input type="checkbox"/> 6 to 10 times	<input type="checkbox"/> In high school	<input type="checkbox"/> Step-mother/Father's girlfriend
<input type="checkbox"/> More than 10 times	<input type="checkbox"/> Is happening now	<input type="checkbox"/> Relative, Who?:
		<input type="checkbox"/> Other, Who?:
If you chose "Relative," were they: <input type="checkbox"/> Male <input type="checkbox"/> Female If you chose "Other," were they: <input type="checkbox"/> Male <input type="checkbox"/> Female		<input type="checkbox"/> A Teenager <input type="checkbox"/> An Adult <input type="checkbox"/> A Teenager <input type="checkbox"/> An Adult

Was the person who did this drinking alcohol at the time? Yes No Don't Know
 Was the person who did this using drugs at the time? Yes No Don't Know

Appendix C: MAP Trauma Symptom Checklist for Children (TSCC) (Sample)

MAP Trauma Symptom Checklist for Children (TSCC)

Questionnaire Items used for analyses in the current report: Please note, the full questionnaire including all the response options are not given, but rather a sampling.

TSCC

(Briere, J. (1996). *Professional Manual for the Trauma Symptom Checklist for Children (TSCC)*. Odessa, FL: Psychological Assessment Resources, Inc.)

The items that follow describe things that youth sometimes think, feel, or do. Reach each item, then mark how often it happens to you by drawing a circle around the correct number.

- Circle **0** if it **never** happens to you. 0 1 2 3
- Circle **1** if it happens **sometimes**. 0 1 2 3
- Circle **2** if it happens **lots of times**. 0 1 2 3
- Circle **3** if it happens **almost all the time**. 0 1 2 3

For example, if you are late for school **sometimes**, you would circle the **1** for this item, like this:

Being late for school. 0 ① 2 3

	Never	Sometimes	Lots of times	Almost all of the time
1. Bad dreams or nightmares	0	1	2	3
2. Feeling afraid something bad might happen	0	1	2	3
3. Scary ideas or pictures just pop into my head	0	1	2	3
4. Wanting to say dirty words	0	1	2	3
5. Pretending I am someone else	0	1	2	3
6. Arguing too much	0	1	2	3
7. Feeling lonely	0	1	2	3
8. Touching my private parts too much	0	1	2	3
9. Feeling sad or unhappy	0	1	2	3
10. Remembering things that happened that I didn't like	0	1	2	3
11. Going away in my mind, trying not to think	0	1	2	3
12. Remembering scary things	0	1	2	3
13. Wanting to yell and break things	0	1	2	3

Appendix D: Gender Differences in TSCC Items

TSCC Subscale	TSCC Items	Gender Differences				t
		Female		Male		
		M	SD	M	SD	
Sexual Concern Subscale Items	# 4: Wanting to say dirty words	0.67	1.01	0.67	0.89	-0.02
	# 8: Touching my private parts too much	0.09	0.43	0.33	0.67	-3.87 **
	# 17: Thinking about having sex	1.01	1.02	1.13	0.96	-1.13
	# 22: Thinking about touching other people's private parts	0.16	0.57	0.36	0.68	-2.85 **
	# 23: Thinking about sex when I don't want to	0.35	0.78	0.43	0.76	-0.94
	# 34: Not trusting people because they might want sex	0.65	1.01	0.17	0.49	5.36 **
	# 40: Getting afraid or upset when I think about sex	0.31	0.77	0.17	0.53	1.93 *
	# 44: Having sex feelings in my body	0.49	0.88	0.73	0.90	-2.34 *
	# 47: Can't stop thinking about sex	0.48	0.88	0.61	0.94	-1.27
	# 54: Getting upset when people talk about sex	0.26	0.66	0.14	0.46	1.77
	Sexual Concern Subscale Scores	4.54	5.58	4.75	4.53	-0.36
Dissociation Subscale Items	# 5: Pretending I am someone else	0.49	0.86	0.40	0.71	0.97
	# 11: Going away in my mind, trying not to think	0.93	1.07	0.71	0.93	1.96 *
	# 18: Feeling dizzy	0.58	0.85	0.38	0.66	2.45 **
	# 29: Feeling like things aren't real	0.72	0.97	0.58	0.92	1.31
	# 30: Forgetting things	0.95	0.97	0.89	1.04	0.54
	# 31: Feeling like I'm not in my body	0.48	0.90	0.38	0.77	1.14
	# 38: Pretending I'm somewhere else	0.49	0.86	0.48	0.85	0.10
	# 45: My mind going blank or empty	0.77	0.98	0.58	0.86	1.82
	# 48: Trying not to have any feelings	0.64	0.97	0.49	0.87	1.48
	# 53: Daydreaming	1.42	1.02	1.28	1.04	1.24
	Dissociation Subscale Scores	7.07	7.06	6.20	6.14	1.17
Posttraumatic Stress Subscale Items	# 1: Bad dreams or nightmares	0.87	0.84	0.61	0.71	3.02 **
	# 3: Scary ideas or pictures just pop into my head	0.76	0.98	0.58	0.83	1.82
	# 10: Remembering things that happened that I didn't like	1.19	1.05	0.88	0.98	2.76 **
	# 11: Going away in my mind, trying not to think	0.93	1.07	0.71	0.93	1.96 *
	# 12: Remembering scary things	0.90	1.03	0.62	0.88	2.63 **
	# 24: Feeling scared of men	0.45	0.82	0.19	0.54	3.42 **
	# 25: Feeling scared of women	0.15	0.55	0.11	0.37	0.64
	# 35: Can't stop thinking about something bad that happen	0.74	0.96	0.62	0.89	1.14
	# 43: Remembering things I don't want to remember	0.85	1.04	0.57	0.84	2.70 **
	# 51: Wishing bad things had ever happened	1.18	1.22	0.99	1.12	1.42
	Posttraumatic Stress Subscale Scores	8.12	7.50	5.92	5.51	2.94 **

TSCC Subscale	TSCC Items	Gender Differences				t
		Female		Male		
		M	SD	M	SD	
Anger Subscale Items	# 6: Arguing too much	0.98	0.97	0.82	0.95	1.47
	# 13: Wanting to yell and break things	0.68	0.99	0.61	0.93	0.63
	# 16: Getting mad and can't calm down	0.80	0.98	0.67	0.86	1.24
	# 19: Wanting to yell at people	0.75	0.98	0.60	0.84	1.50
	# 21: Wanting to hurt other people	0.46	0.87	0.47	0.77	-0.09
	# 36: Getting into fights	0.58	0.78	0.59	0.79	-0.12
	# 37: Feeling mean	0.72	0.87	0.54	0.72	2.05 *
	# 46: Feeling like I hate people	0.79	0.94	0.55	0.85	2.38 *
	# 49: Feeling mad	1.02	1.01	0.74	0.85	2.77 **
	Anger Subscale Scores	6.86	6.81	5.56	5.73	1.80
Depression Subscale Items	# 7: Feeling lonely	0.96	1.04	0.65	0.95	2.80 **
	# 9: Feeling sad or unhappy	1.05	1.01	0.76	0.91	2.73 **
	# 14: Crying	1.19	1.00	0.50	0.82	6.79 **
	# 20: Wanting to hurt myself	0.45	0.89	0.24	0.64	2.42 *
	# 26: Washing myself because I feel dirty on the inside	0.36	0.80	0.19	0.57	2.12 *
	# 27: Feeling stupid or bad	0.68	0.96	0.55	0.81	1.41
	# 28: Feeling like I did something wrong	0.80	0.93	0.65	0.84	1.53
	# 42: Feeling like nobody likes me	0.70	1.00	0.52	0.86	1.70
	# 52: Wanting to kill myself	0.37	0.84	0.25	0.65	1.47
	Depression Subscale Scores	6.46	6.60	4.28	5.03	3.28 **
Anxiety Subscale Items	# 2: Feeling afraid something bad might happen	1.02	0.87	0.78	0.85	2.54 **
	# 15: Getting scared all of a sudden and don't know why	0.66	1.03	0.44	0.83	2.17 *
	# 24: Feeling scared of men	0.45	0.82	0.19	0.54	3.42 **
	# 25: Feeling scared of women	0.15	0.55	0.11	0.37	0.64
	# 32: Feeling nervous or jumpy inside	0.56	0.84	0.53	0.84	0.25
	# 33: Feeling afraid	0.61	0.89	0.45	0.72	1.70
	# 39: Being afraid of the dark	0.53	0.95	0.26	0.61	3.09 **
	# 41: Worrying about things	1.05	1.01	0.81	0.93	2.24 *
	# 50: Feeling afraid somebody will kill me	0.41	0.85	0.27	0.62	1.71
	Anxiety Subscale Scores	5.43	5.82	3.75	4.15	2.95 **
TSCC TOTAL SCORE		36.00	34.10	29.22	25.83	1.86

M – Mean
SD – Standard Deviation
t – Test

Appendix E: MAP 1-Year/OSDUS 2005 Substance Use Questions (Sample)

MAP 1-Year/OSDUS 2005 substance use questions (OSDUS substance use)

Questionnaire Items used for analyses in the current report: Please note, the full questionnaire including all the response options are not given, but rather a sampling.

OSDUS 2005

(Adlaf, E. M., & Paglia-Boak, A. (2005). Drug Use Among Ontario Students, 1977-2005: Detailed OSDUS Findings: (CAMH Research Document No. 16). Toronto, ON: Centre for Addiction and Mental Health.)

These questions are to find out what youth, like yourself, know about alcohol and other drugs (for example, tobacco, cannabis, hallucinogens, cocaine, heroin and medical drugs), how you feel about alcohol and other drugs, and what you do about using alcohol and other drugs. There is no assumption that youth who answer the questionnaire have ever used alcohol or other drugs.

The next section is about alcohol and other drugs. Please answer all questions even if you have never tried these drugs.

1. In the last 12 months, how often did you smoke cigarettes?

- 1. Tried one cigarette
- 2. Less than 1 cigarette a day
- 3. 1 or 2 cigarettes a day
- 4. 3 to 5 cigarettes a day
- 5. 6 to 10 cigarettes a day
- 6. 11 to 15 cigarettes a day
- 7. 16 to 20 cigarettes a day
- 8. More than 20 cigarettes a day
- 9. Smoked, but not in the last 12 months
- 10. Never smoked cigarettes in lifetime

2. Which of the following statements best describes your use of cigarettes IN YOUR LIFETIME

- 1. Never had a cigarette, not even one puff
- 2. Smoked a few puffs to a whole cigarette
- 3. Only 2 to 3 cigarettes
- 4. More than 3, but fewer than 100 cigarettes
- 5. 100 or more cigarettes, but none in the last month
- 6. 100 or more cigarettes, and some during the last month

3. In the last 12 months, how often did you drink alcohol such as liquor (rum, whiskey, etc.), wine, beer, coolers?

- 1. Drank only at special events (for example, Christmas or at weddings)
- 2. Had a sip of alcohol to see what it's like
- 3. Once a month or less often
- 4. 2 or 3 times a month
- 5. Once a week
- 6. 2 or 3 times a week
- 7. 4 or 5 times a week
- 8. Almost every day – 6 or 7 times a week
- 9. Drank, but not in the last 12 months
- 10. Never drunk alcohol in lifetime

4. In the last 12 months, how often did you use Cannabis (also known as marijuana, "weed", "grass", "pot", hashish, "hash", hash oil, etc.)?

- 1. 1 or 2 times
- 2. 3 to 5 times
- 3. 6 to 9 times
- 4. 10 to 19 times
- 5. 20 to 39 times
- 6. 40 or more times
- 7. Used, but not in the last 12 months
- 8. Never used in lifetime
- 9. Don't know what cannabis is

Appendix F: Factor Analysis Results for MAP Intake Childhood Trauma Questionnaire (CTQ) (Revised)

(CTQ, Bernstein, et al., 2003)

CTQ Subscale Items:

- Physical Abuse Subscale Items
- Sexual Abuse Subscale Items
- Emotional Abuse Subscale Items
- Emotional Neglect Subscale Items
- Physical Neglect Subscale Items

Extraction Method:

Principal Component Analysis

Rotation Method:

Varimax with Kaiser Normalization

Female Youth Response	Component			
	1	2	3	4
1. Not enough to eat	.241	.265	.031	.708
2. No one there to protect	.331	.522	.139	.213
3. Family calling names	.695	.248	.155	.107
4. Parents too drunk or high to care	.207	.206	.077	.612
5. Family not made feel important or special	.221	.678	.066	.014
6. Wore dirty clothes	.055	.273	.138	.683
7. Not felt loved	.451	.688	.145	.223
8. Parents wished one had never been born	.676	.372	.049	.229
9. Hit so hard had to see a doctor	.502	.060	.201	.501
10. Hit so hard left marks	.752	.256	.218	.213
11. Punished with belt, cord, or other hard object	.797	.289	.095	.040
12. Family not looking out for each other	.228	.815	-.005	.149
13. Family said hurtful things	.786	.313	.176	.129
14. Physically abused	.755	.250	.222	.170
15. Teacher etc. noticed marks	.646	.089	.347	.361
16. Family hated me	.773	.386	.159	.147
17. Family not felt close	.267	.750	.078	.227
18. Was touched in a sexual way	.165	.131	.926	.004
19. Was coerced into sex	.222	.053	.716	.264
20. Made to watch or do sexual things	.128	.053	.876	.187
21. Molested	.195	.069	.858	.011
22. Emotionally abused	.522	.446	.387	.123
23. Couldn't go see doctor even if required	.185	.725	.153	.243
24. Sexually abused	.162	.174	.897	.018
25. Family's not a source of strength and support	.302	.728	.119	.295

Male Youth Response	Component				
	1	2	3	4	5
1. Not enough to eat	.128	.050	.154	.177	.735
2. No one there to protect	.700	-.026	.106	.001	.157
3. Family calling names	.089	.117	.111	.683	.420
4. Parents too drunk or high to care	.335	.032	.058	-.105	.534
5. Family not made feel important or special	.712	-.007	.057	.040	.116
6. Wore dirty clothes	.071	.043	.065	.093	.776
7. Not felt loved	.722	.024	.139	.420	.033
8. Parents wished one had never been born	.201	-.095	.286	.715	.038
9. Hit so hard had to see a doctor	.060	.087	.668	-.014	.288
10. Hit so hard left marks	.231	.092	.774	.291	.027
11. Punished with belt, cord, or other hard object	.133	.114	.697	.329	.161
12. Family not looking out for each other	.696	-.002	.173	.195	.083
13. Family said hurtful things	.357	.040	.391	.623	.054
14. Physically abused	.259	.245	.783	.173	-.102
15. Teacher etc. noticed marks	.084	.063	.786	.275	.089
16. Family hated me	.211	.045	.386	.659	-.059
17. Family not felt close	.797	.065	.157	.273	.005
18. Was touched in a sexual way	-.026	.900	.128	.091	.030
19. Was coerced into sex	.014	.822	.109	-.060	.134
20. Made to watch or do sexual things	.005	.857	.075	.008	.014
21. Molested	-.048	.913	.033	.074	-.014
22. Emotionally abused	.235	.455	.422	.496	.000
23. Couldn't go see doctor even if required	.750	.032	.068	-.022	.131
24. Sexually abused	.002	.930	.106	-.029	.024
25. Family's not a source of strength and support	.759	-.072	.143	.228	.048

Coping with Becoming a Teen When You Have Been Maltreated as a Child

UP AGAINST A WALL



**SUBSTANCE USE AMONG ADOLESCENTS IN CHILD WELFARE
VERSUS ADOLESCENTS IN THE GENERAL POPULATION:**

A Comparison of the Maltreatment and Adolescent Pathways (MAP) Longitudinal Study and the Ontario Student Drug Use Survey (OSDUS) Datasets