The Interrelations among Sexual Victimization, Attachment Style, Interpersonal Relationship Satisfaction, and Substance Use in Women

by

Carolyn Mirotchnick
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Supervisory Committee

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Abstract

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This study examined the interrelations among sexual victimization, attachment style, interpersonal relationship satisfaction, and substance use. Sexual victimization (i.e., child sexual abuse and adult sexual assault; CSA and ASA) is a major social concern for which further research is needed. While it is difficult to determine which difficulties are direct outcomes of sexual victimization, both CSA and ASA have been found to be associated with a variety of mental health problems, along with numerous other adverse outcomes across the lifespan (e.g., depression, risk of suicide, attachment insecurity, interpersonal relationship problems, substance abuse). By further exploring these relations and identifying potential mediating variables, specific therapy techniques may be tailored in order to address these variables in treatment. Factors such as attachment and interpersonal relationships are particularly important to consider when examining sexual victimization, due to the intimate nature of this type of victimization. It was expected that sexual victimization in women (controlling for other forms of childhood maltreatment) would predict insecure adult attachment, greater levels of harmful substance use (i.e., drug and alcohol abuse), and lower reported relationship satisfaction. Results indicated that women who experienced more severe CSA and anxious attachment engaged in greater levels of drug abuse (i.e., anxious attachment moderated the relation

between CSA and drug abuse). In addition, women who experienced more severe ASA and child psychological abuse reported greater attachment insecurity (both attachment avoidance and anxiety) in their relationships and engaged in greater levels of substance abuse (i.e., both drug and alcohol abuse). Furthermore, women with greater levels of anxious attachment reported lower levels of relationship satisfaction. These findings suggest that clinicians working with women survivors of sexual victimization should be aware of potential attachment-related difficulties, as well as an increased risk of developing substance use problems that may be stemming from victimization experiences.

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Introduction

The sexual victimization of women is a pervasive social problem. It is particularly important to study the long-term effects of sexual victimization experiences because a history of sexual victimization, especially as a child, has been found to be associated with mental health difficulties, along with numerous other adverse outcomes, both in childhood and adulthood (Barker-Collo & Read, 2003; Resick, 1993; Silverman, Reinherz, & Giaconia, 1996). Previous studies have found that 13% of women met criteria for child sexual abuse (CSA) before age 18 and that 22% of women aged 18 and older reported experiencing adult sexual assault (ASA; Elliott, Mok, & Briere, 2004; Rellini, Vujanovic, Gilbert, & Zvolensky, 2012). These alarmingly high rates are actually likely to be much higher, as most sexual offences are never reported (Brennan & Taylor-Butts, 2008). While definitions for the different types of sexual victimization (i.e., child sexual abuse and adult sexual assault) vary, individuals who are victimized are often subjected to more than one type of abuse.

Types of Sexual Victimization

Child sexual abuse. According to the Department of Justice of Canada (2011), child abuse is considered to be when a parent or person in a position of responsibility, power, or trust subjects a child to any type of violence, maltreatment, or neglect. CSA refers to the sexual exploitation of a child or indecent exposure to a child by an adult or older perpetrator who is in a position of power, trust, or responsibility (Department of Justice of Canada, 2011). Examples include fondling, inviting the child to touch or be touched in a sexual way, intercourse, rape, incest, or having the child take part in prostitution or pornography. CSA can also be described as intercourse (sexual, oral, or

anal) and sexual contact with a child (Bulkley, Feller, Stern, & Roe, 1996). In Canada, the age of consent for sexual activity is generally 16 years, but the age of consent is 18 years when the sexual activity involves exploitation, such as prostitution, pornography, or occurs in a relationship of authority, trust, or dependency (Department of Justice of Canada, 2011). Sexual exploitation can also be based on the nature and circumstances of the relationship, such as the age difference between the young person and the perpetrator, how their relationship developed (e.g., quickly, secretly, or over the Internet), and how the perpetrator may have pressured, forced, or influenced the young person.

A meta-analysis investigating the prevalence of CSA throughout the world was conducted using 217 publications from 1980 to 2008 (Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). Based on combining self-report data across studies, the prevalence of CSA among women in Canada and the United States (data for the two countries were merged) was 20.1%. If we take into account all the incidents that did not get reported or were not deemed to meet criteria for CSA, this number is potentially much larger. According to self-report measures from an online survey in the U.S., 13% of women in a young adult (18-25 years) sample met criteria for CSA before age 18 (Rellini et al., 2012). In a sample of high school students aged 16 to 19 years old, 35.7% of women endorsed at least one sexual abuse-related item in a measure that assessed the severity of unwanted sexual experiences before the age of 18 (Asgeirsdottir, Sigfusdottir, Gudjonsson, & Sigurdsson, 2011). Using a sample of undergraduate women and self-report measures, another study found that 7.7% met criteria for having experienced CSA before age 14 (Tansill, Edwards, Kearns, Gidycz, & Calhoun, 2012). In a sample of Canadian women university students, the prevalence rate of CSA prior to

age 18 was 19% (Runtz, 2002). According to Finkelhor (1991), reported rates of CSA may vary from one study to another due to differences in CSA definitions (e.g., only contact CSA vs. including non-contact CSA, age cut-offs, etc.), variation related to sample selection (e.g., geographic areas, population subgroup, etc.), as well as differences in the administration of questions regarding the experience. For example, in-person interviews have been found to yield higher CSA rates than telephone interviews or self-report measures (Peters, Wyatt, & Finkelhor, 1986).

Adult sexual assault. ASA can be defined as any type of forced, non-consensual sexual activity or threats related to sexual activity (Criminal Code of Canada, 1985). It can range from threats, to non-consensual sexual touching, to forced intercourse. ASA is considered to have occurred in situations when the individual cannot give consent due to disability, intoxication, intimidation, coercion, or is otherwise incapable of giving consent, and can also include the use of deceit. The Criminal Code of Canada divides sexual assault into three levels, in which level one is the experience of any type of non-consensual sexual activity (Section 271), level two includes the use of a weapon, threats to use a weapon, or threats to harm a third party (Section 272), and level three occurs when the perpetrator physically harms, maims, disfigures, severely beats, or threatens a life during the assault (Section 273). According to the Criminal Code, an adult is someone who is 18 years or older (Section 172). Studies using Koss and Gidycz's (1985) Sexual Experiences Survey (which was also used in the current study) tend to define ASA as non-consensual sexual contact or coercion, attempted rape, or completed rape experienced by someone aged 14 years or older. Rape is defined as non-consensual intercourse (i.e., vaginal, anal, or oral) using force, threatening to use force, or when the

person was intoxicated. Sexual coercion refers to sexual intercourse when verbal pressure or authority was used, but involved no physical force or threats to use force. Sexual contact involves unwanted kissing or fondling without any attempted intercourse, and involves using verbal pressure, authority, physical threats, or physical force.

According to Statistics Canada's 2009 General Social Survey (GSS), there is a rate of 21 sexual assault incidents per 1,000 people aged 15 years and older (Statistics Canada, 2010). This is much higher than the 24,200 sexual offences reported by the police in 2007, as police-reports generally have much lower sexual assault counts due to under reporting (Brennan & Taylor-Butts, 2008). Moreover, the prevalence of ASA is difficult to measure using government statistics alone, and according to the GSS, approximately 90% of sexual offences are not formally documented. It is therefore important to also look at prevalence rates from previous research studies using a variety of samples.

In a study by Elliott and colleagues (2004), ASA (after age 18) was reported by 22% of women in a random sample from the general population (aged 18-90 years; using self-report measures). In a community sample of women ages 18 to 55 years old, 26% reported rape and 39% reported coerced intercourse occurring at 18 years of age or older (using self-report measures; Messman-Moore & Long, 2002). In a sample of undergraduate women, 42% of participants reported lifetime sexual victimization, and among these women, 20.9% reported only CSA (i.e., before age 14), 33.1% reported only adolescent sexual victimization (i.e., between ages 14 and 18), and 22.8% reported only adult sexual victimization (i.e., 18 years and older; Walsh, DiLillo, & Messman-Moore, 2012).

Importance of Examining Sexual Victimization in Women

Although rates of sexual victimization may vary across different samples and studies, it is evidently a widespread form of victimization and a major social concern for which further research is needed. Experiencing sexual victimization either as a child, an adult, or both, has been associated with many subsequent problems throughout the lifespan (Barker-Collo & Read, 2003; Resick, 1993). More specifically, a history of CSA is a salient risk factor for later behavioural and emotional difficulties such as high levels of distress, suicidal ideation and attempts, depression, anxiety, eating disorders, dissociation, posttraumatic stress disorder (PTSD), interpersonal relationship problems, a negative view of the self and others, substance abuse, and challenges in social adjustment (Barker-Collo & Read, 2003; Fortier, DiLillo, Messman-Moore, Peugh, & DeNardi, 2009; Whiffen & Macintosh, 2005).

A study by Mullen et al. (1996) assessed the relation between childhood abuse (i.e., CSA, emotional abuse, and child physical abuse [CPA]) and subsequent psychosocial functioning in a randomized community sample of women. Results demonstrated that the participants who experienced CSA showed significantly greater mental health problems (e.g., eating disorders, depression, substance abuse, attempted suicide, sexual problems, etc.) than those who had experienced the other types of abuse. These findings support the idea that there is an association between sexual abuse in childhood and these particular sequelae in adulthood.

ASA has also been associated with major adverse short and long-term impacts (Resick, 1993). Following an assault, women (14 years and older) who were recruited from a centre for victims of violent crime and rape were found to experience sleep

difficulties, changes in appetite, decreased interest in normal activities, and lower levels of concentration (Frank & Stewart, 1984). A longitudinal study by Atkeson, Calhoun, Resick, and Ellis (1982) compared ASA survivors (15 years and older) from a sample of patients at a hospital rape crisis centre to participants with no ASA experiences. The control group was recruited from social service agencies and housing projects, and had similar socioeconomic statuses as the ASA survivors. Participants were assessed both directly after the incident and across the following one-year period. Results showed that those in the ASA group were significantly more depressed than those in the no-ASA group. ASA has also been associated with increased levels of fear and anxiety, sexual dysfunction, and increased risk for developing obsessive-compulsive disorder, panic disorder, and substance use disorders (Burnam et al., 1988; DiLillo, Lewis, & Di Loreto-Colgan, 2007; Ellis, Calhoun, & Atkeson, 1981).

While it is difficult to determine which serious difficulties are direct outcomes of sexual victimization, both CSA and ASA are still clearly associated with a wide range of severe problems. It is therefore crucial to further explore the nature of this relation and to investigate potential mediating variables. By identifying mediating variables, specific therapy techniques may then be tailored to address these variables in treatment, which may in turn lead to improvement in coping with these highly adverse experiences (Roche, Runtz, & Hunter, 1999). Factors such as attachment and interpersonal relationships are particularly important to consider when examining sexual victimization, due to the intimate nature of this type of victimization.

Because there may be qualitatively different factors associated with ASA and CSA experiences in men (e.g., amount of physical force used, injury severity, emotional

impact of the experience), the current study focuses on women to avoid any overgeneralizations across genders (DiLillo et al., 2007; Johnson & Bunge, 2001; Struckman-Johnson, 1988; Struckman-Johnson & Struckman-Johnson, 1994). According to Rellini et al. (2012), because men and women generally have distinct interpersonal and sexual functioning difficulties, it is better to assess men and women separately in order to obtain more accurate interpretations of the factors that are associated with each gender. For example, in a study by DiLillo et al. (2007), while women who experienced child maltreatment reported greater psychological and relationship problems as adults than women with no history of victimization, this relation was not significant in men.

In addition, although it is important to investigate abusive experiences in both men and women, it is especially critical to assess women when examining the effects CSA and ASA, as previous research indicates they are significantly more likely than males to be at risk for abuse, particularly sexual victimization (Burnam et al., 1988; Silverman et al., 1996; Tjaden & Thoennes, 2000). For example, in 2009, the rate of family-related sexual offences was more than four times higher for girls than for boys (Statistics Canada, 2011). Furthermore, Silverman et al. found that women in a community sample of young adults were approximately three times more likely than men to experience any type of abuse and were more than 11 times more likely than men to report sexual abuse. These results were also consistent with other previous findings (e.g., Burnam et al., 1988; Ernst, Angst, & Foldenyi, 1993). In addition, a study by Elliott et al. (2004) found that ASA survivors were significantly more likely to be women, as ASA was reported by 22% of women compared to 3.8% of men.

By identifying and understanding the contributing and mediating factors underlying the association between sexual victimization and psychological adjustment in women, we can use these findings as a basis to design effective intervention strategies and to reduce the degree of risk and the severity of negative consequences associated with sexual victimization.

Sexual Victimization and Substance Abuse

Research has consistently shown an association between CSA and the later development of substance abuse in women (e.g., Harrison, Fulkerson, & Beebe, 1997; Messman-Moore & Long, 2002; Miller, Downs, Gondoli, & Keil, 1987; White & Widom, 2008). Indeed, a meta analysis conducted by Moncrieff and Farmer (1998) found that in samples of problem drinkers, more severe CSA experiences were associated with greater alcohol abuse problems in women, while fewer studies found this relation to be significant among men. In a study examining public school students (grades 6 to 12), those who had a history of sexual abuse only were found to have greater rates of multiple substance use (i.e., drug and alcohol use) than those who had experienced physical abuse only (Harrison et al., 1997). For example, sixth grade girls who had a history of sexual abuse only were 12 times more likely to use multiple substances than those who had not experienced any type of abuse, and 3 times more likely to use multiple substances than those who had experienced physical abuse only. Similar results were found in a study by Moran, Vuchinich, and Hall (2004) using a sample of high-school students. Among participants who had experienced one type of abuse only (i.e., either emotional, sexual, or physical abuse), experiencing sexual abuse had the strongest association with substance use.

Sexual victimization experiences have also been associated with an increased risk of developing comorbid PTSD and substance abuse problems (i.e., drug and alcohol abuse; e.g., Kilpatrick et al., 2000; Kilpatrick et al., 2003). The use of substances among people with PTSD symptoms can be explained using the concept of self-medication, in which survivors turn to substances in an attempt to temporarily alleviate feelings of distress associated with a traumatic experience (McFarlane, 1998). Through negative reinforcement, this may eventually lead to substance use problems. In particular, survivors of sexual victimization have been hypothesized to use substances to avoid or reduce unpleasant feelings and memories associated with the victimization experience (Briere & Runtz, 1993; Messman-Moore & Long, 2002). According to Kilpatrick et al. (2000), women may engage in substance use to alleviate mental health problems and reduce negative affect associated with an assault experience. Since substances are only temporarily effective in reducing aversive emotions, substance use may increase in order to maintain the numbing effect. It must also be noted, however, that substance use can also increase the risk of trauma and subsequent PTSD (e.g., the procurement of illicit substances through prostitution or other high-risk behaviours; Farley & Barkan, 1998; Howard & Qi Wang, 2003; Kingston & Raghavan, 2009; Messman-Moore, Ward, & Brown, 2009; Shannon et al., 2009). For example, substance use and intoxication reduce problem-solving and risk assessment skills, as well as self-protective behaviour (Testa & Parks, 1996).

It is imperative to investigate substance abuse among CSA survivors as these individuals may be at risk of developing serious health problems. For example, De Bellis et al. (1999) proposed that comorbid substance abuse (both drug and alcohol abuse) and

PTSD among CSA survivors might be associated with changes in the biological stress systems and hence may contribute to adverse brain development (e.g., damage to the hippocampus and possibly the limbic areas of the brain). Moreover, it is particularly important to examine substance use among undergraduate students, as adolescence and young adulthood (i.e., 12-25 years) is a critical period during which neuronal pruning can interact with problematic substance use to place youth at risk for long term addiction (Crews, He, & Hodge, 2007).

In addition, having a coexisting substance use disorder (i.e., drug and alcohol use) and a history of sexual abuse has been found to be associated with a greater risk of suicide attempts in women, as well as with other significant psychological difficulties (e.g., mood disorders and greater levels of aggression; Brent et al., 2002). Indeed, according to a study by Hill, Boyd, and Kortge (2000), CSA, drug and alcohol use problems, and suicidality seem to be strongly interrelated. For example, among women with substance use problems, a history of CSA was associated with twice as much risk for suicide attempts compared to those who had not experienced sexual abuse. Participants were women (aged 19 or older) who regularly used crack cocaine and who were recruited from within their community or from treatment settings. Because sexual victimization and substance abuse are both associated with risks to one's health and well-being, it is crucial that further research is developed to explore these relations, so as to contribute findings to the improvement of therapy techniques and prevention efforts.

As there is limited research on the underlying mechanisms of the association between a history of child maltreatment and later substance abuse, it is especially important to focus on potential mediators of the relation between a history of CSA and

subsequent substance abuse in women. A study by White and Widom (2008) assessed whether PTSD, life stressors, and delinquent behaviour in young adulthood would each mediate the effects of childhood abuse and neglect on substance use and other related problems in middle adulthood. They used a sample of 582 women with court-documented cases of childhood physical and sexual abuse (at ages 0-11 years) who were located in adulthood and closely matched with women who had not been maltreated during childhood. Results showed that all three variables (i.e., PTSD, life stressors, and delinquent behaviour) partially mediated the effects of child abuse and neglect on later illicit drug use frequency and on alcohol and drug use problems (i.e., negative consequences associated with alcohol and drug use, such as passing out, getting into fights, showing up at work intoxicated, etc.). They also found a significant direct association between childhood abuse and neglect and substance use-related problems in women. When considered simultaneously, however, PTSD was the only significant partial mediator for illicit drug use frequency, and stressful life events remained the only significant partial mediator for problems associated with substance use. The study also found that women who were abused and neglected as children reported more PTSD symptoms and stressful life events than those with no history of maltreatment. PTSD and stressful life events also predicted later drug use and related problems. Despite the fact that findings were based on extreme cases of childhood abuse and neglect that had been taken from official court records, and results may therefore not generalize to all cases of abuse and neglect, this study underlines the need for early interventions for maltreated women (especially those with PTSD symptoms) to promote the development of

constructive coping strategies, and to prevent the development of substance abuse problems.

A study by Schuck and Widom (2001) attempted to establish a causal link between childhood abuse and neglect, and subsequent alcohol abuse in women. They believed that four criteria needed to be met in order to establish a causal relation between child maltreatment and subsequent alcohol abuse: the relation must be logical, an empirical association must be demonstrated (e.g., through previous research), a correct temporal sequence must exist, and it must be demonstrated that the relation is not spurious, or due to other variables. To meet the third condition, in their study, abused and neglected children were matched with children who had not experienced maltreatment, and were followed prospectively into adulthood. For the fourth condition, they statistically controlled for variables that are considered to be common covariates of child maltreatment and alcohol abuse (e.g., parental drinking problems, SES, and cultural background). Significant results were found supporting this causal inference (i.e., that child abuse is a causal factor in the development of later alcohol use), even after controlling for possible confounding variables (e.g., IQ, SES, parental drug and alcohol use history). Results indicated that women who experienced abuse and neglect during childhood were more likely to acknowledge using alcohol and drugs to make themselves feel better and to cope with the stress of victimization. Women who adopted this coping strategy were subsequently more likely to show a greater number of signs of problematic drinking (signs were based on items from the Alcohol Abuse or Dependence component of the Diagnostic Interview Schedule-III-R, such as frequent intoxication and alcohol abuse despite risk; Robins, Helzer, Cottler, & Goldring, 1989). It must be noted,

however, that although the data in this study seem to support a causal relation as defined by Schuck and Widom, the results may not necessarily be interpreted by all researchers as demonstrating causality. For instance, although they controlled for other potentially confounding factors (e.g., race, IQ, family poverty, and parents' alcohol or drug history), they cannot be certain that these are the only factors for which they should control. In addition, they were unable to determine a temporal sequence between childhood maltreatment and potential mediators (e.g., does being abused as a child lead to depressive symptoms, which in turn leads to alcohol use, or does childhood abuse lead to alcohol abuse, which in turn leads to depression?). The sample was also based on court-documented cases of abuse, and therefore may not be representative of all cases of child maltreatment, such as those that were unreported or that were unsubstantiated. Furthermore, because of a decreased sample size due to attrition ($N = 582$), the study did not differentiate between the different types of child abuse and neglect, so any potentially distinct effects associated with each type of maltreatment may have been overlooked.

Fleming, Mullen, Sibthorpe, Attewell, and Bammer (1998) also investigated the relation between a history of CSA and alcohol use in a sample of randomly selected women from the Australian electoral rolls. In this study, however, CSA was not found to be a significant predictor of alcohol abuse. Nonetheless, when combined with co-factors such as growing up with a mother who was perceived as cold, uncaring, emotionally absent, or rejecting; having an alcoholic partner; and believing that alcohol is a sexual disinhibitor, a history of CSA became significantly related to alcohol abuse. More specifically, based on a multiple logistic regression model predicting alcohol abuse, a two-way interaction was found between CSA and parenting style, such that when all

other factors were equal, the risk of alcohol abuse increased for women with a history of CSA when they viewed their mother as emotionally absent or rejecting. Based on their findings, the authors speculated that it might be the severity of the CSA experience that is related to subsequent alcohol abuse (i.e., only severe CSA experiences may predict alcohol abuse), as opposed to simply whether or not any kind of CSA has been experienced. Despite certain limitations (see *Common Limitations* section), this research emphasizes the impact of a mother's emotional support and the role of family background on emotional development, as well as on alcohol abuse in particular.

Alcohol and drug abuse problems have also been found to be associated with sexual victimization in adults (Burnam et al., 1988; Messman-Moore & Long, 2002), although a considerable amount of research seems to focus on substance use as a *predictor* of ASA, as opposed to ASA experiences leading to the development of substance abuse problems (e.g., Burnam et al., 1988; Marx, Van Wie, & Gross, 1996; Ullman, Karabatsos, & Koss, 1999). For example, Messman-Moore and Long (2002) found that women who reported ASA experiences were significantly more likely than women with no ASA experiences to meet criteria for substance abuse problems. Although they interpreted from these results that substance abuse predicted ASA, they also acknowledged that due to the study's cross-sectional and retrospective design, it is possible that this relation is actually in the opposite direction. Other studies have found that ASA is associated with increased risk for future alcohol abuse problems (Kilpatrick et al., 1997). For example, in a longitudinal study by Kilpatrick et al., results indicated that assault (physical and sexual) leads to alcohol abuse problems in adult women, after controlling for previous alcohol abuse. Because of the mixed findings about the relation

between ASA and substance use (i.e., drug and alcohol use), future research is needed in order to obtain more information about its directionality.

Importance of Assessing Drugs and Alcohol Separately

Although previous sexual victimization research has frequently assessed all types of substance use simultaneously, certain findings indicate that examining alcohol use separately from other drugs is important (Dansky et al., 1996; Ullman, Nadjowski, & Filipas, 2009). In general, undergraduate samples seem to differ in rates of alcohol versus drug use (e.g., Mosher & Danoff-Burg, 2010). A study by Mosher and Danoff-Burg found that among undergraduate students (men and women), the rate of heavy alcohol use (i.e., five or more alcoholic drinks in one sitting) was 71%, the rate of drug use (e.g., cocaine, amphetamines, steroids) was between 0.2% and 4%, and the 30-day prevalence of marijuana use was 34%. Among sexual victimization survivors, rates of drug abuse have also been found to differ from rates of alcohol abuse (Dansky et al., 1996). More specifically, Dansky and colleagues found that sexual assault prevalence rates were significantly greater among participants with cocaine abuse problems than among participants with alcohol abuse problems. Furthermore, while the Kilpatrick et al. study (1997) found support for increased alcohol use as a consequence of assault, they found the relation between illicit drug use and assault to be reciprocal. According to Kilpatrick et al., women who have been sexually victimized may engage in both drug and alcohol use to cope with negative emotions and other problems associated with the experience. In terms of the reciprocal relation between assault and drug use, Kilpatrick and colleague's results suggested that women with drug abuse problems may be less likely to detect perpetrators (e.g., due to drug-related impairment), and they may be more

likely to be exposed to perpetrators due to high-risk behaviours and lifestyles that involve drug use, thus increasing risk for future assault.

Attachment Theory

Sexual victimization can also influence the development of trusting interpersonal relationships, particularly with romantic partners (Whiffen & Macintosh, 2005). Indeed, a history of CSA might significantly impede the development of a positive sense of self, which in turn impacts social relationships (Cole & Putnam, 1992). One way to further explain this is by looking at the significant impact of CSA on adult attachment patterns (Roche et al., 1999; Styron & Janoff-Bulman, 1997). Attachment theory is used to describe people's drive to form "strong affectional bonds" (Bowlby, 1977, p. 201) with others, particularly toward caregivers. According to attachment theory, children form internal working models of the self and others that are based on their relationships with their parents or caregivers (Whiffen & Macintosh, 2005). A working model is a cognitive schema that is based on early experience with the attachment figure and represents the child's sense of self-worth and expectations, as well as his or her beliefs concerning interpersonal relationships.

According to Bowlby (1977), the parent-child relationship is strongly associated with the child's future behaviour and adult interpersonal relationship quality. When the caregiver is responsive, supportive, and consistent, it is more likely that the individual will develop a positive working model of the self and others, and a secure attachment pattern. A securely attached individual views others as trustworthy and responsive, and views himself or herself as self-reliant and worthy of others' support and attention (Alexander, 1993). Secure attachment is very important for an individual's well-being

and the development of healthy interpersonal relationships in adulthood. An unsupportive caregiver can be neglectful, unresponsive, inconsistent, rejecting, or threatening. As implied by Bowlby, this type of attachment figure may contribute to negative internal working models, less adaptive attachment patterns (e.g., anxious or avoidant attachment), along with greater emotional and psychological difficulties (e.g., anxiety, depression, and emotional detachment) that are maintained throughout adulthood.

An insecurely attached individual is one who views others as unreliable, rejecting, neglectful, and sometimes even abusive, and views himself or herself as unworthy of the support and attention of others. This may be expressed as either anxious or avoidant attachment. In romantic relationships, anxious attachment is characterized by insecurity, emotional dependency, and excessive preoccupation with the significant other (Hindy & Schwarz, 1994). People who have anxious attachment styles are often untrusting and more likely to question their partner's love. Those who show signs of avoidant attachment have difficulties with intimacy in their relationships and are less likely to turn to their partners for support or to offer support to their partners (Asgeirsdottir et al., 2011). Other studies have described different types of insecure attachment patterns, such as insecure-preoccupied and insecure-dismissing (Caspers, Cadoret, Langbehn, Yucuis, & Troutman, 2005). These terms were used by Caspers et al. to classify people as preoccupied when they were "unable to focus on the questions at hand or [became] actively angry when discussing childhood experiences and [were] unable to separate themselves from [their] relationships" (p. 1009). Dismissing attachment was

characterized by an inability to support positive portrayals of parents during childhood and a tendency to act as though little importance was placed on relationships.

Child Sexual Abuse and Attachment

In a review by Alexander (1993), attachment theory was used to examine the long-term effects of CSA on family dynamics, adult interpersonal relationships, and psychological difficulties. At the time of publication, however, the relation between CSA and attachment had not yet directly been explored. Alexander described how previous research found that physically abused or neglected children are more likely to show insecure attachment patterns (e.g., avoidance and resistance). According to the author, the diversity of symptoms and problems exhibited by abuse survivors is mediated by the survivor's attachment experiences. Interpersonal problems (e.g., influence on subsequent intimate relationships), affect regulation (e.g., sequelae of affective disturbances associated with different types of insecure attachment), and disturbance of self (e.g., negative self-esteem) all seem to be related to attachment patterns. In terms of the clinical and research implications of applying attachment theory to the study of CSA, the author suggested that in order to increase recovery and protect against other kinds of abuse in the future, therapy techniques must address attachment relationships preceding and surrounding the experience of the abuse. The marital relationship of the abuse survivor should also be explored in therapy, especially in terms of survivor's working model of relationships, and prevention may be increased with greater support provided to at-risk families that promotes secure parent-child attachment relationships. Despite the fact that at the time, attachment theory had not yet been specifically applied to research on CSA, the author provides support for the idea that attachment theory is indeed a useful

framework for explaining the impact of CSA on relationships. The importance of further research was emphasized in order to test the hypotheses that certain family and parent-child relationships are associated with specific patterns of abuse, and that parent-child attachment can account for some of the diversity of outcomes in CSA survivors.

Although much has yet to be learned, there is now a growing body of research specifically assessing the relation between different attachment patterns and CSA. For example, a study by Roche et al. (1999) explored the association between CSA, adult attachment patterns, and adult psychological adjustment in undergraduate women. Results showed that women CSA survivors (particularly those with a history of intrafamilial CSA) demonstrated less secure and more fearful attachment patterns as adults than women without a history of CSA. Findings also indicated that CSA was associated with poorer psychological adjustment and that attachment mediated the relation between CSA and psychological adjustment.

A study conducted by Shapiro and Levendosky (1999) investigated whether attachment style and coping strategies were mediators of the relation between CSA and psychological and interpersonal functioning in a sample of female adolescents. Coping behaviour can be described as the strategies an individual uses to manage adverse life events (Folkman & Lazarus, 1980). An individual may engage in different coping styles depending on the particular stressor or situation. Although CSA, attachment, and coping were not found to be significantly related, a more secure attachment style was found to be associated with a lower amount of psychological distress experienced among CSA survivors, and attachment style mediated the effects of CSA on coping and psychological distress. This study also emphasized the importance of further research that uses

attachment as a framework to identify mediating variables in order to better understand the differences in levels of functioning among CSA survivors. Interventions that focus on reducing the use of maladaptive avoidant coping strategies (i.e., strategies that involve getting away from the threat, such as using alcohol or drugs, behavioural disengagement, and using denial) might be particularly important.

The long-term consequences of childhood abuse and early attachment in undergraduates have also been explored by Styron and Janoff-Bulman (1997). More specifically, they examined the contributions of child abuse and early attachment to three areas of adult functioning: adult attachment style, depression, and conflict resolution behaviours. Because there was a large amount of overlap found between the different types of child abuse experiences (e.g., verbal, sexual, and physical), participants were simply divided into "Abuse" and "No-Abuse" groups for the purposes of this study, based on having endorsed one or more child abuse-related experiences. Based on self-report measures, they found that participants who had been abused as children were significantly more likely to report insecure attachments in both their childhood and adult relationships than those who had not been abused. Results also indicated that the participants with a history of abuse showed more symptoms of depression and were more likely to use destructive behaviours in conflict situations, such as insults and physical violence. In particular, abuse history was found to be the strongest predictor of destructive conflict resolution strategies (controlling for other predictors; e.g., childhood attachment to parents). These findings show support for the idea that the long-term effects of childhood abuse on adult attachment and depression are likely influenced by early attachment experiences (i.e., early attachment experiences may mediate the relation

between long-term effects of child abuse and depression or attachment in adulthood), and that child abuse seems to impact conflict resolution skills. This study had several limitations, however, such as a restricted amount of items that were included when assessing the context of each participant's experience with abuse (e.g., age at time of abuse, relationship with perpetrator). Importantly, the use of retrospective self-report measures to assess attachment and maltreatment in childhood may have been subject to distortions and social desirability bias. Nevertheless, the findings still underline the significance of considering childhood abuse in terms of its impacts on learning how to deal with conflict situations and on attachment relationships, in order to better understand its long-term effects on psychological well-being and interpersonal functioning. Furthermore, the importance of early relationships with parents is highlighted in terms of the potential of a secure relationship to reduce the negative impact of abuse on attachment and depression across the lifespan.

In a review by Barker-Collo and Read (2003), early and recent models that attempt to explain individual variation in responses to CSA are discussed and critiqued. Early models found that the negative effects of abuse were significantly predicted from self-blame, increased involvement of authorities, greater severity of abuse, and a greater number of rapes per abuse incident. Recent models have incorporated a wider range of personal, cognitive, social, and environmental factors as potential mediators and moderators of each individual's reactions to this trauma. More specifically, Barker-Collo and Read's review indicated that insecure attachment (e.g., anxious or avoidant attachment) among people with a history of CSA acts as a risk factor for depression, trauma symptoms, poor coping strategies, and social introversion, whereas secure

attachment may act as a protective factor that increases a survivor's ability to adapt. Because findings indicated that individual differences and the context of the abusive situation impact later mental health adjustment, the authors propose that when treating abuse survivors, mental health agencies should be required to comprehensively assess the individual's psychosocial history, particularly in terms of the nature of the abusive situation itself.

Sexual Victimization and Relationship Satisfaction

As previously discussed, early affective experiences, particularly between children and their caregivers, have a profound effect on later emotional, social, and psychological development (Collins & Read, 1990). More specifically, research has typically found that these early interactions and attachment patterns have a powerful impact on future intimate relationship quality and satisfaction. Stable and satisfying romantic relationships are important because they can significantly influence emotional well-being, psychological functioning, and coping skills in stressful situations (Egeci & Gencoz, 2006; Simon & Barrett, 2010).

In general, research indicates that individuals with insecure attachment styles report less satisfaction in romantic relationships than those with secure attachment (Hazan & Shaver, 1987). Furthermore, research has found that a history of sexual victimization in women is often associated with lower quality and satisfaction of intimate relationships compared to women with no sexual victimization experiences (DiLillo et al., 2007). Because not all survivors of sexual victimization develop difficulties with interpersonal relationships, it is crucial to further examine specific risk factors that may have an impact on future relationship functioning. In an attempt to explain the relation of

CSA with later emotional and relationship problems, previous research has examined the mediating effects of factors such as attachment behaviour (Whiffen & MacIntosh, 2005). Indeed, a history of CSA is found to be associated with lower relationship satisfaction, and this link is mediated by attachment insecurity. Such relationship difficulties may be associated with problems stemming from abuse perpetrated by attachment figures, for example, emotional dysregulation, negative perceptions of self and others, or distorted views of what constitutes a positive, loving relationship (Finkelhor & Browne, 1985; Riggs, 2010).

Similar to the way in which early attachment experiences impact adult interpersonal relationships, Finkelhor and Browne (1985) conceptualized a framework regarding the impact of CSA experiences on adult relationships. They believed that CSA experiences may eventually lead to confusion among survivors about their sexual identities and about what constitutes appropriate sexual behaviour. As adults they may thus experience sexual difficulties, such as problems with arousal and a negative emotional association with sex (e.g., fear, anger, feelings of helplessness), which can lead to an aversion of sex and to difficulties with intimate relationships in general (Tsai & Wagner, 1978). Feelings of betrayal and mistrust associated with abuse from someone trusted can also lead to relationship difficulties.

ASA experiences may also be associated with lower relationship satisfaction. For example, a study by Kilpatrick et al. (1987) found that rape was associated with marital difficulties. In addition, ASA has been found to be associated with subsequent sexual dysfunction and lower sexual satisfaction (Ellis et al., 1981). In a study by Ellis et al., emotional and social-sexual functioning were assessed in a sample of women ASA

survivors (16 years and older) directly after the incident and over the course of the following year. Results showed that ASA experiences might be associated with reduced sexual enjoyment and sexual activity. Moreover, between 10% and 20% of the women had sexual problems that persisted over the long-term. The authors believe that these difficulties may result from women feeling helpless, guilty, degraded, or vulnerable, as well as feeling a loss of control following the incident. There may be changes in attitude about their bodies, their romantic partners, and particular types of sexual activity. In turn, sexual dysfunction can have an important impact on overall relationship quality, as sexual satisfaction and relationship satisfaction have consistently been found to be positively associated (e.g., Byers, 2005; Haavio-Mannila & Kontula, 1997; Purnine & Carey, 1997). Moreover, Finkelhor and Browne (1985) emphasize the need for further research on these associations in order to decrease the potential of developing intimacy problems, sexual dysfunction, and relationship troubles among survivors of sexual abuse.

Child Sexual Abuse, Attachment, and Substance Abuse

A review summarizing the literature on treatments for child abuse-related PTSD and substance abuse discussed how the Barker-Collo and Read paper (2003) provided important insights into the connections between PTSD and the development of substance abuse problems (Cohen, Mannarino, Zhitova, & Capone, 2003). Despite the fact that substance abuse was not specifically examined in the Barker-Collo and Read paper (2003), their conclusions about insecure attachment may offer a useful theoretical framework to explain the connection between CSA and the development of subsequent substance use problems. According to the framework proposed by Cohen et al. (2003), abused children with insecure attachment styles tend to use avoidant problem-solving

strategies, as opposed to more constructive and direct approaches. In previous studies, avoidant coping strategies (e.g., denial and disengagement) have also been related to an increased risk of psychopathology, especially cognitive avoidance, which is a coping strategy in which the individual "avert[s his or her] attention from threat-relevant cues" (Gerson et al., 2011, p. 298; Krohne et al., 2000). Based on previous findings and similar to McFarlane's previously mentioned theory relating PTSD with substance use (1998), Cohen et al. posited that people with insecure attachment patterns and a history of CSA might be more likely to use drugs and/or alcohol to self-medicate and to temporarily reduce negative emotions, stress, and disturbing memories associated with the sexual victimization experience, particularly as they get older. As discussed earlier, in order to maintain this state of numbness after the effects of the substances have worn off, they might be more inclined to increase the frequency and the amount of the substances used. Over time this may develop into substance dependency and addiction, which in turn can lead to potentially permanent physical and psychological harm.

Another study investigated the potential contribution of working models of childhood attachment relationships in explaining the relation between child maltreatment (e.g., CSA and CPA) and different types of adult interpersonal violence (e.g., partner violence victimization and adult non-partner physical victimization) for women with and without a history of cocaine abuse (Feerick, Haugaard, & Hien, 2002). It was predicted that cocaine abuse in adulthood would be the strongest risk factor in predicting adult interpersonal violence, whereas the effects of child maltreatment and attachment would only be negligible. They also believed that the associations between child maltreatment, attachment, and later violence would be greater for women without a history of cocaine

abuse. Despite the fact that they found a significant relation between childhood physical abuse and insecure attachment, neither CSA, CPA, nor insecure attachment were found to be significantly related to cocaine abuse. Results also showed a stronger association between attachment, adult interpersonal violence, and child maltreatment for women with no history of cocaine problems than for cocaine abusing women. According to the study, women with a history of cocaine abuse were no more likely than the non-abusing control group to have a history of CSA or physical abuse, or to show insecure childhood attachment styles. The reasoning was that cocaine abuse was such an important risk factor that other predictors were "overshadowed" as a result. This study had several limitations. For example, certain types of maltreatment may be greater predictors of later problems for different subgroups of women, so both childhood and adulthood experiences would need to be explored in understanding risk factors. The authors emphasized the need for further research on high and low-risk populations to examine relations between early abuse experiences (including effects of modelling and social learning) on subsequent problems, as well as the importance of violence prevention strategies and interventions designed to help victims of child maltreatment with healthy development.

Attachment and Substance Abuse

Previous studies have frequently found a significant relation between insecure attachment patterns and substance abuse (i.e., drug and alcohol abuse). A study by Caspers et al. (2005) used attachment theory to explore the association between early childhood experiences with caretakers on later psychological functioning during adulthood. They did so by testing the association between secure attachment, perceived

available social support, and illicit drug use in a sample of adult adoptees. They proposed that people with insecure attachment would have an increased likelihood of using ineffective methods of coping with negative emotions, and would be more likely to use strategies such as distancing (which can be described as emotionally withdrawing themselves; Kross, Duckworth, Ayduk, Tsukayama, & Mischel, 2011) or repression (which refers to having low emotional reactivity in an attempt to avoid the conscious perception of negative feelings; Diamond, Hicks, & Otter-Henderson, 2006; Mund & Mitte, 2011). Caspers et al. believed that the ineffective management of negative emotions among the insecure groups would lead to an increased risk for using illicit drugs in an attempt to reduce emotional discomfort. Results showed support for attachment style as a risk factor for illicit drug use. They found increased rates of illicit drug use among the participants who were classified as insecure-dismissing or insecure-preoccupied compared to participants in the secure group. They also found a mediating role of perceived social support among the group that was classified as insecure-preoccupied (see *Attachment Theory* subsection for definitions). Results from this study might suggest that insecure attachment styles are associated with less effective emotional regulation, which can lead to a greater risk of developing substance abuse problems and other maladaptive behaviours in adulthood. The importance of taking into account individual attachment patterns in terms of prevention and treatment techniques for drug abuse problems was emphasized.

Attachment, fear of intimacy, and self-differentiation in clients undergoing treatment for drug and alcohol abuse were assessed in a study by Thorberg and Lyvers (2006). They predicted that compared to a control group, participants who had addiction

problems would be more likely to demonstrate lower levels of secure attachment and self-differentiation (i.e., the ability to experience intimacy in interpersonal relationships while still maintaining one's autonomy), and higher levels of insecure attachment and fear of intimacy (Skowron & Friedlander, 1998). Results showed support for a relation between an insecure attachment style, lower levels of self-differentiation, and increased levels of alcohol consumption or drug abuse (Thorberg & Lyvers). The participants with addiction problems reported significantly higher levels of fear of intimacy and insecure attachment compared to the control group, and they also scored lower overall on self-differentiation. These characteristics might specifically be associated with an increased likelihood to develop a substance abuse problem. Before firmly establishing that a secure attachment style, low fear of intimacy, and high self-differentiation reduce the likelihood of developing a substance dependency, however, further research - particularly longitudinal studies - need to be carried out. It is also difficult to establish causality, as high fear of intimacy, insecure attachment, and low self-differentiation might be direct or indirect effects of long-term substance dependencies (as opposed to being risk factors for substance abuse problems).

Relationship Satisfaction and Substance Abuse

Substance abuse problems have also been associated with relationship problems (Fals-Stewart, Birchler, & O'Farrell, 1999; O'Farrell & Birchler, 1987). According to Fals-Stewart et al., drug abuse may increase levels of distress and conflicts in interpersonal relationships. In this study, they investigated couples in which one or both of the partners met criteria for a psychoactive drug use disorder and compared them with couples who had no drug use problems and were seeking treatment for relationship

conflicts. Results indicated that when both members of the couple experienced drug abuse problems, they were found to have high relationship dissatisfaction and reported high levels of relationship conflicts. For couples in which one member had a drug abuse problem, longer periods of abstinence from drugs were associated with increased relationship satisfaction and stability. These findings are consistent with previous studies, which have found that couples with substance abuse (i.e., drug and alcohol abuse) problems are also likely to have relationship troubles (Kosten, Jalali, Steidl, & Kleber, 1987; O'Farrell & Birchler, 1987). In general, DiLillo and Long (1999) speculated that psychological and adjustment problems that can be frequently seen in survivors of CSA (such as substance abuse) might be associated with lower satisfaction in intimate relationships.

In an attempt to determine whether substance use leads to problems in intimate relationships or whether relationship difficulties cause partners to turn to substances in order to feel better, Newcomb (1994) examined interpersonal relationship functioning and drug and alcohol use in an ethnically diverse sample of men and women over a period of four years. Participants were originally contacted through a U.S. school board during middle school, and were part of an ongoing longitudinal study. Only those who were in an intimate romantic relationship at the time of the most recent wave of data collection were included in this study. Whereas substance use predicted relationship problems and lower satisfaction over time, relationship quality did not lead to changes in levels of substance use over time. Among women, the use of various drugs (e.g., cannabis, cocaine) led to lower relationship satisfaction, increased relationship difficulties, and greater divorce rates. Higher frequency of alcohol use was also

associated with lower sexual satisfaction in women. In addition, increased partner support was associated with decreased cocaine use over time for women. These results emphasize the powerful adverse impact of substance use on maintaining satisfying and secure intimate relationships over time.

Common Limitations of the Research

Certain common limitations were found in many of the previously described retrospective self-report studies looking at sexual victimization, attachment, relationship satisfaction, and substance abuse variables. First, results may have often been subject to recall bias, as participants' responses may have been distorted due to measures involving retrospective self-report (Fleming et al., 1998; Styron & Janoff-Bulman, 1997). For example, women's recollections of their interpersonal relationships or their maltreatment experiences may not accurately reflect reality (e.g., because of elapsed time or due to potential distortions caused by substance abuse; Feerick et al., 2002). Second, many of the studies have involved small and non-random samples, and may therefore have been unrepresentative of the general population (e.g., Shapiro & Levendosky, 1999). Examples include participants consisting only of undergraduate students, or of people who came from a high-risk sample of low-income, minority women living in the inner city (e.g., Feerick et al.). In several studies, there were also a small number of participants with a history of CSA, which may have decreased the likelihood of finding significant results (e.g., Fleming et al.). Furthermore, results may have suffered due to the potential under-reporting of problematic drinking or of sexual victimization among the respondents. Last, causal relations between childhood experiences and problematic

outcomes in adulthood could not usually be established, as most of the studies were correlational instead of longitudinal in design (Feerick et al.; Styron & Janoff-Bulman).

Objectives of the Current Study

The main objective of the current study is to examine the interrelations among sexual victimization (i.e., CSA and ASA, while controlling for other types of maltreatment), adult insecure attachment styles (i.e., anxious and avoidant), relationship satisfaction, and harmful drug and alcohol use in women who are in romantic relationships. In order to address the effects of the severity of the sexual victimization experience, we looked at CSA and ASA experiences as both continuous variables (for statistical analyses purposes) and dichotomous variables (when assessing frequencies). According to the findings of Fleming et al. (1998), harmful drinking may depend on the severity of the CSA experience, rather than simply whether or not CSA occurred.

As previously discussed, numerous studies have found a significant relation between a history of sexual victimization and insecure attachment patterns (e.g., Roche et al., 1999; Styron & Janoff-Bulman, 1997). In addition, a significant relation between sexual victimization experiences and subsequent substance abuse (i.e., drug and alcohol abuse) has generally been consistently found in previous research (e.g., Harrison et al.; Kilpatrick et al., 1997; Miller et al., 1987; White & Widom, 2008). Further, a history of sexual victimization in women has been associated with lower intimate relationship satisfaction, and this link is mediated by attachment insecurity (Whiffen & MacIntosh, 2005). Research also suggests that individuals with insecure attachment patterns report lower relationship satisfaction in romantic relationships than those with secure attachment (Hazan & Shaver, 1987), and are at greater risk of developing substance

abuse problems (Caspers et al., 2005; Thorberg & Lyvers, 2006). Finally, increased substance use has been found to predict lower relationship satisfaction (Fals-Stewart et al., 1999; Newcomb, 1994).

Although there is limited available research on the relation between insecure attachment, relationship satisfaction, and substance abuse specifically in women who have experienced sexual victimization, based on previous findings it would seem that they may be significantly associated. Research is also lacking that evaluates the influence of the severity of the sexual victimization experience, substance use problems, relationship troubles, and attachment insecurities, which might be important in terms of catering to individual treatment needs. Specific hypotheses of the current study include:

1. Sexual victimization in women (i.e., CSA and ASA; controlling for other forms of abuse) will predict insecure adult attachment (i.e., greater anxious and avoidant attachment).
2. Women who experienced sexual victimization will engage in greater levels of problematic substance use (i.e., drug and alcohol use).
3. Sexual victimization will predict lower reported relationship satisfaction.
4. Greater substance abuse will predict lower relationship satisfaction.
5. Attachment style will mediate the relation between sexual victimization, relationship satisfaction, and substance abuse. More specifically, attachment will mediate between sexual victimization and substance abuse and between sexual victimization and relationship satisfaction.

This research will contribute to a better understanding of the factors that affect survivors of sexual abuse. By exploring the interactions among sexual victimization,

attachment styles, relationship satisfaction, and subsequent substance abuse, we will be able to identify key variables on which to focus in order to improve coping, prevention, and treatment techniques based on the needs of each individual. For example, the development of healthy attachments in adult relationships may be beneficial towards improving relationship quality and decreasing reliance on substance use as a means of coping with earlier victimization experiences. The ultimate goal of this research is to provide information that will contribute to the improvement of the health and well-being of sexual victimization survivors in general, and especially those with substance abuse problems.

Method

Participants

The analyses in the current study used data collected for a study conducted by Dr. M. Runtz, called the *Life Events, Health, and Relationships (LEHR)* study, which examines the long-term health sequelae of interpersonal victimization across the lifespan. The Human Research Ethics Board at the University of Victoria approved this study. A sample of approximately 555 women between the ages of 18 to 46 participated in this study over the course of approximately 16 months, however for the current study, we only used the data of participants who reported currently being in a romantic relationship ($N = 287$). Participants consisted of undergraduate students at the University of Victoria who were recruited through an announcement on the university's Introductory Psychology class online research participation system (SONA; with a total of approximately 1000 students enrolled in Psychology 100 each academic year). In order to participate, students were required to be 18 years of age or older. Students were

awarded bonus points toward their course grade in Psychology 100 in return for their participation.

Procedure

The announcement for this study was listed on an online research participant program called SONA, along with other studies being conducted in the psychology department. Students were informed that the study took 90 minutes to complete and that it was designed to provide understanding of the associations between interpersonal experiences and physical and psychological health, as well as to assess the utility of a new measure of adult attachment. Participants were invited to sign up for and attend one of the testing sessions at an on-campus computer lab. The questionnaires were completed at individual computer stations with sufficient space between stations to ensure confidentiality. Each study session consisted of a maximum of 17 people, with an average range of about 8 to 12 students per session. Before beginning the questionnaires, participants were asked to read an online informed consent form (see Appendix A), and needed to click on the appropriate box in order to provide their consent and to proceed to the survey. After completing the study, participants viewed an online debriefing form (see Appendix B) and were also given a paper copy. The debriefing form described the purpose of the study and provided participants with the researchers' contact information, along with information regarding metal health resources that were available to participants.

Measures

Demographics. Demographic information was obtained using questions about age, gender, ethnicity, primary language, education, income, parental education and

income, relationship status, and sexual orientation (see Appendix C). These data provide descriptive information about the sample and also allow us to determine any confounding variables for which to control.

Sexual victimization measures.

Childhood Sexual Abuse questionnaire. CSA was calculated using a retrospective measure that assesses self-reported CSA in adults (see Appendix D). The items we used were modified versions of questions from a screening instrument created by Leserman, Drossman, and Li (1995) that were originally intended for identifying sexual abuse in a medical population. The questionnaire on which the items were based was found to have adequate levels of reliability and validity in identifying women with a history of sexual abuse, with 81% agreement in test-retest reliability and 81% agreement between the questionnaire and an interview on sexual abuse (Leserman et al., 1995). The modified version used in the current study consists of 7 dichotomous (*yes-no*) items with follow up items, such as age at the time of the incident, age and gender of the offender, relationship to offender, frequency of these incidents, and whether physical force was used. These follow up items were used to learn more about the different types of CSA experiences, such as the proportion of male perpetrators, the mean age of perpetrators, the proportion of perpetrators who were family members, and the proportion of survivors who experienced CSA more than once. For the purposes of this study, CSA is defined as the endorsement of one or more unwanted sexual experiences prior to the age of 14, based on 6 dichotomous (*yes-no*) questions that range from the inappropriate exposure of sex organs or sexual-related threats, to unwanted genital touching or unwanted intercourse. Some examples include “Has anyone ever touched the sex organs of your

body when you did not want this?" and "Has anyone ever forced you to have intercourse (anal or vaginal) when you did not want this?" To create a CSA continuous score (ranging from 0-3), participants were given a score of 0 if they did not endorse any CSA items, a score of 1 if they endorsed any non-contact CSA items (i.e., exposure or threat), a score of 2 if they endorsed items related to unwanted contact (e.g., forced touching), and a score of 3 if they endorsed items related to forced penetration (i.e., oral, anal, or vaginal). The measure had a high reliability (α = .82) in the current sample.

Sexual Experiences Survey (SES). ASA was assessed using the SES (Koss et al., 2007), which consists of 10 questions about unwanted sexual experiences since age 14 and during the past year (see Appendix E). The measure provides information regarding the frequency and type of unwanted sexual incidents, whether or not the perpetrator completed the unwanted sexual act, the perpetrator's tactics (e.g., use of physical force or threats), the perpetrator's gender, and whether or not the participant reports having been raped. A sample item is "Someone had oral sex with me or made me have oral sex with them without my consent by: a) Telling lies, threatening to end the relationship, threatening to spread rumours about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to; b) Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to; c) Taking advantage of me when I was too drunk or out of it to stop what was happening; d) Threatening to physically harm me or someone close to me; e) Using force, for example holding me down with their body weight, pinning my arms, or having a weapon." Response options range from 0 to 3+ times. Scores range from 0-5, and higher scores indicate more severe unwanted sexual experiences in the following

order: no victimization (0), unwanted sexual contact (1), attempted coerced sex (2), coerced sex (3), attempted rape (4), and completed rape (5). The original SES (Koss & Gidycz, 1985) was found to have a test-retest reliability of .93 for a one-week period and a Cronbach's alpha of .74 in a sample of women college students. Other studies have also found Cronbach's alpha above .70 in an adult female sample (e.g., Messman-Moore, Long, & Siegried, 2000) as well as high test-retest reliability among women with a mean age of 19 years (e.g., an average of 94% consistent responses across all items, measured twice within a 4-week period; Krahé, Reimer, Scheinberger-Olwig, & Fritsche, 1999). The SES had an excellent reliability for ASA in the past year and since the age of 14 combined (α = .96) in the current sample.

We used both CSA and ASA measures to assess sexual victimization in the current study. Rather than combining the two measures to form a single sexual victimization score, we kept the two variables separate. This approach is similar to previous studies that have examined both types of sexual victimization (e.g., Coid et al., 2003; Filipas & Ullman, 2006; Fortier et al., 2009).

Child physical and psychological maltreatment measures.

Family Violence Screening Questionnaire (FVSQ). Child physical abuse (CPA; used as a control variable) was measured with two items from the FVSQ (see Appendix F). These items were modified versions of items that were part of a screening instrument also created by Leserman et al. (1995) to identify physical abuse in a medical population. The measure was found to have acceptable levels of reliability and validity in identifying women who have experienced physical abuse, with 77% agreement in test-retest reliability and 70% agreement between the questionnaire and an interview on physical

abuse. For the purposes of this study, CPA is defined as the endorsement of one or more experiences in which either their mother or their father directly subjected them to physical aggression prior to the age of 18. The items asked participants how often, in an average year, a parent "Hit, kick, or beat you" and "Seriously threatened your life". Response options range from 0 (*never*) to 6 (*over 20 times a year*). Participants responded to the items twice – once for each parent. CPA continuous scores were calculated by adding up scores for the endorsed items with scores ranging from 0 to 12 for each parent. The FVSQ for both parents combined had an adequate reliability (α = .57) in the current sample.

Psychological Maltreatment Review (PMR). Child psychological maltreatment (CPM; used as a control variable) was assessed using the PMR (see Appendix G; Briere, 2006; Briere, Godbout, & Runtz, 2012). The PMR is a 30-item retrospective self-report questionnaire that consists of three 10-item subscales, which examine child psychological abuse, psychological neglect, and psychological support, measured separately for participants' mothers and fathers. For the purposes of this study, only items from the child psychological abuse and psychological neglect subscales are included. Sample items from the child psychological abuse subscale include "Yelled at you" and "Insulted you". Items from the psychological neglect subscale include "Left you alone for long periods of time when they shouldn't have" and "Acted like they didn't seem to care about you". Participants reported how often, in the average year, each experience occurred prior to age 18. Responses consist of a scale ranging from 0 (*never*) to 6 (*over 20 times a year*). Scores for each subscale are summed and range from 0 to 60. Each subscale was found to have good structural validity, construct validity, and internal consistency, with

Cronbach's alphas greater than or equal to .89 (Briere et al., 2012). Additionally, each of the PMR subscales was found to be significantly correlated with anxious and avoidant attachment in close relationships. In the current sample, the PMR for both parents combined had an excellent reliability for child psychological abuse (α = .94), and for child psychological neglect subscales (α = .95).

Attachment.

Experiences in Close Relationships (ECR). The ECR assesses adult attachment in romantic relationships, and consists of 36 self-report items that can be divided into two 18-item attachment dimensions: avoidance and anxiety (see Appendix H; Brennan, Clark, & Shaver, 1998). All items are rated on a Likert-type scale going from 1 (*strongly disagree*) to 7 (*strongly agree*). The questions assess how people feel about their romantic relationships in general, not only their current ones. In a sample of undergraduates, Brennan et al. (1998) found that the avoidance dimension had a Cronbach's alpha of .94. Sample items include "I don't feel comfortable opening up to romantic partners" and "I find it difficult to allow myself to depend on romantic partners". The anxiety dimension had a Cronbach's alpha of .91, and sample items include "I worry a lot about my relationships" and "I worry that romantic partners won't care about me as much as I care about them". Total scores for each subscale are calculated by summing the score for each item, with total scores ranging from 18 to 126 for each subscale. Higher scores on each of the dimensions indicate greater attachment anxiety and attachment avoidance. The ECR has been found to be a reliable measure of attachment; for example, a study by Lopez and Gormley (2002) reported that the avoidance dimension had a test–retest reliability of .71, while the anxiety dimension had

a test–retest reliability of .68 across a 6-month period. In addition, Brennan, Shaver, and Clark (2000) found the ECR to be a valid measure of attachment, and both the anxiety and avoidance subscales were correlated with touch aversion. This reflects the ECR's validity because touch can be a crucial component of adult attachment and has been used as a nonverbal indicator of closeness in romantic relationships (Tucker & Anders, 1998). In the context of romantic relationships, touch aversion refers to when individuals dislike or avoid being physically touched by their partner (Brennan, Wu, & Loev, 1998). A study by Schirmer and Lopez (2001) compared the Relationship Questionnaire (RQ; i.e., a categorical measure of adult attachment; Bartholomew & Horowitz, 1991) with the ECR and found that both measures of adult attachment corresponded as expected, which provides further support for the validity of the ECR. For example, individuals who were classified as secure on the RQ scored significantly lower on the avoidance subscale of the ECR than those who were classified as dismissing or fearful. Furthermore, those who were categorized as either secure or dismissing had significantly lower scores on the anxiety subscale of the ECR than those who were categorized as either preoccupied or fearful. In the present sample, the ECR had an adequate reliability for attachment avoidance (α = .56) and an excellent reliability for attachment anxiety (α = .92).

Substance abuse scales.

Drug Abuse Screening Test–10 (DAST-10). Drug abuse was assessed using the DAST–10 (see Appendix I; Skinner, 1982). The DAST-10 consists of 10 yes-no items that measure harmful drug-use related behaviours (for drugs other than alcohol or nicotine) over the previous 12 months and prior to the past year. The DAST-10 total score is computed by adding scores for all endorsed items, with higher scores indicating

more severe drug use problems (range = 0 to 10). Harmful lifetime drug use was computed by combining drug use in the past year and drug use prior to the past year and dividing the score by 2 (i.e., the average of past year and prior) to give comparable scores in the 0 to 10 range. "Drug use" in this context refers to the use of illicit drugs or excessive use of prescribed or over-the-counter drugs beyond the appropriate directions (e.g., cannabis, cocaine, hallucinogens). Sample items include: "Do you use more than one drug at a time?" and "Are you unable to stop using drugs when you want to?" A cut-off score of 3 indicates a potential problem, as these scores were found to have the most optimal balance between sensitivity and specificity (Cocco & Carey, 1998). More specifically, scores 3 to 5 indicate a "moderate level", and scores 6 to 8 indicate a "substantial level" of problematic drug use. The DAST-10 has been found to have good internal consistency, with a Cronbach's alpha of .86, and good test-retest reliability of .71 (McCabe, Boyd, Cranford, Morales, & Slayden, 2006). In the current sample, the DAST-10 had a good reliability for lifetime problematic drug use (α = .80). In a sample of undergraduate women, McCabe and colleagues (2006) found that 30.8% of women answered yes to at least one item and 7.8% answered yes to three or more items. The DAST-10 has also been found to reliably identify people who need treatment for drug abuse problems. For the purposes of the LEHR study, we also used a questionnaire created by Woodin (2008) to assess how frequently participants engage in the use of 12 different types of drugs (e.g., marijuana, ecstasy, cocaine, etc.) during the past year and throughout their lives. The response scores for each drug ranged from 0 (*never*) to 6 (*40 or more times*).

Alcohol Use Disorders Identification Test (AUDIT). In order to assess alcohol abuse, the AUDIT (World Health Organization, 1992) was used (see Appendix J). The AUDIT is a 10-item self-report screening measure for harmful drinking, in which participants responded to questions about their drinking habits (e.g., frequency and amount) that are scored from 0 (e.g., *never*) to 4 (e.g., *4 or more times a week*). Higher scores indicate greater severity of the problem. Sample items include "How often do you have a drink containing alcohol?" and "How many drinks containing alcohol do you have on a typical day when you are drinking?" In terms of its internal consistency, the AUDIT was found to have a Cronbach's alpha of .83 in a large sample recruited from various treatment programs for impaired drivers (Hays, Merz, & Nicholas, 1995). In a sample of undergraduate students, the Cronbach's alpha was found to be .80 (Fleming, Barry, & MacDonald, 1991) and 0.84 in a more recent study (Sylvers, Landfield, & Lilienfeld, 2011). In the current sample, the AUDIT also had a good reliability (α = .77). Using a cut-off point of 8 (in which scores of 8 or more are indicators of hazardous and harmful alcohol use), the overall sensitivity for hazardous and harmful alcohol use was found to range from 87% to 96%, with an overall value of 92% (Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). The overall specificity was found to range from 81% to 98%, with an overall value of 94%. Sensitivity refers to the percent of individuals with an alcohol problem who are correctly identified, and specificity refers to the percent of individuals with no alcohol problems who are correctly identified. The AUDIT items were found to accurately discriminate between patients with problematic drinking habits and those with non-problematic habits. Alternately, previous studies have found that using a cut-off point of 10 for women (in which scores of 10 or more are indicators of

hazardous and harmful alcohol use) provides a "rigorous criterion" for selecting cases, with a sensitivity of 80% and specificity of 98% (Fleming et al., 1998). For the current study we used total scores (i.e., continuous) and a cut-off point of 8 for problematic drinking.

Relationship satisfaction.

Dyadic Adjustment Scale-Brief Version (DAS-4). Based on items from the Satisfaction scale on the original Dyadic Adjustment Scale (Spanier, 1976), the four-item DAS-4 was used to examine intimate relationship satisfaction in participants' current relationships (see Appendix K; Sabourin, Valois, & Lussier, 2005). Responses for the first three items range from 0 (*never*) to 5 (*all the time*) and a sample item includes, "In general, how often do you think that things between you and your partner are going well?" The fourth item assesses participants' happiness in their current relationship, and responses range from 0 (*extremely unhappy*) to 6 (*perfect*). Total scores on each of the four items are summed to create an overall continuous relationship satisfaction score, with higher scores indicating greater relationship satisfaction. Scores can also be used to categorize participants into the following categories: "clinically distressed" (i.e., scores below 12), "borderline" (i.e., scores of 12 to 14), and "non-distressed" (i.e., scores above 14). In a large sample of cohabiting couples, the DAS-4 has been found to be effective in assessing relationship satisfaction and distinguishing between distressed versus non-distressed couples as indicated by the full version (i.e., DAS-32), with a reliability greater than .81 for both distressed and non-distressed couples, and a standardized alpha of .84 (Sabourin et al.). The DAS-4 was also found to have better predictive validity (i.e.,

couple dissolution over a period of 2 years) than the DAS-32. In the current sample, the DAS-4 had a good reliability (α = .76).

Results

Missing Data Procedures and Preliminary Analyses

Before analyzing the data, the following variables were assessed for missing data through SPSS 21: CSA, ASA, CPA by mother, CPA by father, Psyc-Ab (child psychological abuse) by mother, Psyc-Ab by father, Psyc-Neg (child psychological neglect) by mother, Psyc-Neg by father, attachment avoidance, attachment anxiety, drug abuse in the past year, drug abuse prior to the past year, drug abuse ever, alcohol abuse, and relationship satisfaction. Sixteen participants did not respond to any items on at least one of the key measures (e.g., CSA, ECR, DAST-10, DAS-4) and were thus removed from the current analyses (leaving a total N = 271). Missing data analyses revealed that values were missing at random (MAR) on the attachment, drug abuse, alcohol abuse, and relationship satisfaction measures using Little's Missing Completely at Random (MCAR) test, $\chi 2 = 2137.806$, df = 2159, $p = 0.62$. Since the MCAR test was not significant, this indicates that variables are MAR. All items used to score these measures had less than 5% missing values for all cases. Because data were found to be MAR, an expectation-maximization (EM) procedure was used to find the Maximum Likelihood (ML) estimates for the missing data (Enders, 2001).

For the victimization measures, missing data were left blank so as not to over or underestimate the participants' abuse experiences. Total scores were thus computed based only on the completed items. Accordingly, total scores for abusive experiences were based on data from 100% of cases for Psyc-Ab, Psyc-Neg, CPA, and CSA, and

99.3% of cases for ASA ($N = 269$). Total scores were calculated for 99.6% ($N = 270$) of participants for CPA by mother, 97.4% ($N = 264$) for CPA by father, 99.6% ($N = 270$) for psychological maltreatment by mother, 96.7% ($N = 262$) for psychological maltreatment by father), 99.6% ($N = 270$) for Psyc-Neg by mother, and 96.3% ($N = 261$) for Psyc-Neg by father.

Upon inspection of graphs (e.g., histograms and boxplots) and tables (e.g., descriptive statistics output tables with frequencies, minimums, maximums, means, and standard deviations), for each variable (i.e., sexual victimization, child maltreatment, substance abuse, attachment, and relationship satisfaction variables), no scores were highly different from the other scores on a particular measure in terms of standard deviations above and below the mean, and accordingly, no cases were identified as outliers. In addition, all values were within the allowable range for each variable (for specific ranges for each variable, see Measures section). Thus, no obvious errors in the data (e.g., scores outside the allowable range) were detected. Although certain variables had a significant positive skew and significant kurtosis (e.g., CSA, alcohol abuse, drug abuse, etc.), several methods of calculating transformed variables yielded no improvements because variables still had a significant skew and kurtosis despite the transformations (e.g., log transformation, square root transformation, and reciprocal transformation). Therefore no transformations were used. Furthermore, transformation can make interpreting the data more difficult, and according to Field (2009), the consequences of using the "wrong" transformation may be worse than the consequences of analyzing untransformed data.

Frequencies and Means

Frequencies were determined for demographic variables (e.g., ethnicity, primary language, socioeconomic status, parental socioeconomic status, sexual orientation, etc.; see Table 1). The mean age was 21.49 years (*Mdn* = 20.00, *SD* = 3.80, range = 18 – 46 years). Mean scores and standard deviations were calculated for all continuous variables (e.g., CSA, ASA, attachment, drug abuse, alcohol abuse, relationship satisfaction, etc.; see Table 2).

Table 1

Selected Demographic Characteristics of Participants

Variable	*N*	*n*	%
Ethnicity	271		
Asian		25	9.2
African-Canadian		1	0.4
Caucasian		201	74.2
Hispanic		9	3.3
Other		5	1.8
Mixed		30	11.1
Primary Language	269		
English		252	93.7
French		3	1.1
Spanish		6	2.2
Asian (e.g., Chinese)		7	2.6
Other (e.g., Czech)		1	0.4
Relationship Status	261		
Never married (but in a relationship)		195	74.7
Living with partner		56	21.5
Married		8	3.1
Separated/divorced/widowed		2	0.8
Sexual Orientation	271		
Heterosexual		251	92.6
Lesbian		3	1.1
Bisexual		14	5.2
Other (asexual, pansexual)		3	1.1
Annual Personal Income	271		
Less than $10,000		179	66.1
$10,000 - $19,999		45	16.6
$20,000 - $29,999		13	4.8
$30,000 - $39,999		5	1.8

$40,000 or more		4	1.5
No answer		25	9.2
Parent's Education	271		
Some high school		10	3.7
Completed high school		20	7.4
Trade school		37	13.7
Some university		24	8.9
Undergraduate degree		76	28.0
Master's degree		69	25.5
Doctoral degree		13	4.8
Other professional degree (e.g., M.D.)		22	8.1
Parent's Annual Income	271		
Less than $10,000		7	2.6
$10,000 - $19,999		5	1.8
$20,000 - $29,999		6	2.2
$30,000 - $39,999		12	4.4
$40,000 - $49,999		14	5.2
$50,000 - $59,999		26	9.6
$60,000 - $69,999		19	7.0
$70,000 - $79,999		21	7.7
$80,000 - $89,999		31	11.4
$90,000 - $99,999		16	5.9
$100,000 or more		89	32.8
Not applicable		25	9.2

Note. Parent's education = highest level of education attained by either parent

Table 2

Descriptive Statistics for Continuous Measures of Interest

Variable	*M*	*SD*	Range
CSA	0.34	.78	0 – 3
ASA	2.00	2.18	0 – 5
CPA by Mother	0.49	1.38	0 – 10
CPA by Father	0.37	1.05	0 – 7
CPA Total	0.85	1.95	0 – 13
Psyc-Ab by Mother	13.10	13.86	0 – 59
Psyc-Ab by Father	11.61	11.57	0 – 56
Psyc-Ab Total	24.28	22.18	0 – 104
Psyc-Neg by Mother	9.17	12.94	0 – 59
Psyc-Neg by Father	10.38	12.61	0 – 55
Psyc-Neg Total	19.13	23.63	0 – 114
ECR Avoidant	72.67	9.08	36 – 102
ECR Anxious	62.56	19.76	18 – 116
Drug Abuse Past Year	1.09	1.37	0 – 8
Drug Abuse Prior to Past Year	1.55	1.77	0 – 10
Drug Abuse Ever	1.32	1.38	0 – 6.62
Alcohol Abuse	7.00	4.56	0 – 22
Relationship Satisfaction	13.24	1.95	7 – 17

Note. CSA = child sexual abuse, ASA = adult sexual assault, CPA = child physical abuse, Psyc-Ab = child psychological abuse, Psyc-Neg = child psychological neglect, ECR = Experiences in Close Relationships

Sexual victimization. CSA (i.e., the endorsement of one or more unwanted sexual experiences prior to the age of 14, ranging from the inappropriate exposure of sex organs or sexual-related threats, to unwanted genital touching and unwanted intercourse) was experienced by 18.5% (*n* = 50). Contact CSA (i.e., CSA involving physical contact, such as unwanted genital touching and unwanted intercourse) was experienced by 11.4% (*n* = 31). More specifically, 12.2% of participants (*n* = 33) had someone expose their sex organs to them when they did not want this, 4.1% (*n* = 11) had someone threaten to have sex with them against their will, 10.7% (*n* = 29) experienced inappropriate/non-consensual touching of their sex organs, 5.2% (*n* = 14) were forced to touch someone else's sex organs, 2.6% (*n* = 7) were forced to have oral sex, and 2.6% (*n* = 7) were forced to have intercourse (anal or vaginal). Regarding the most severe level of CSA experienced by the women, 3.7% (*n* = 10) reported forced penetration (oral, anal, or vaginal), 7.8% (*n* = 21) reported unwanted contact CSA (e.g., inappropriate touching), and 7% (*n* = 19) reported only non-contact CSA (e.g., exposure or threat). The mean age of occurrence for women's first unwanted sexual experience of any type was 9.7 years (*SD* = 2.87). While 4.1% (*n* = 11) experienced these events with the same person, 5.5% (*n* = 15) experienced these events with more than one person. Experiencing only a single unwanted sexual experience during childhood was reported by 8.9% (*n* = 24) of the women, while 9.6% (*n* = 26) experienced CSA more than once. Three or fewer other CSA perpetrators were reported to be involved in the incident for 26.4% of survivors (*n* = 14), and one woman reported that 15 other perpetrators were involved. Among CSA survivors (i.e., all types of CSA including both contact and non-contact), the perpetrator was a family member for 26% (*n* = 13), a known non-family member for 42% (*n* = 21),

and a stranger for 18% (*n* = 9) of participants. Physical force was used in 22% (*n* = 11) of CSA events. Of the women who experienced any type of CSA (i.e., contact or non-contact), males were the perpetrators in 90% (*n* = 45) of cases. The mean age of the perpetrator was 18.18 years (Range = 6 to 68 years; *SD* = 12.49) and 28% (*n* =14) of perpetrators were 18 or older. Although one does not usually think of perpetrators of CSA being as young as 6 years old, participants were asked in the instructions to identify any unwanted sexual experience that occurred prior to the age of 14 (whether it was with playmates, friends, relatives, or acquaintances). These situations of non-consensual sexual activity with a peer at a young age may still have caused potential distress and these experiences are not captured by any of the other measures. As a result, they were included as CSA experiences. This approach is similar to the way CSA was measured in a study by Jarvis, Copeland, and Walton (1998), in which CSA was not dependent on the use of physical force or a specific age difference between the victimizer and the child. This is also comparable to a study by Lilly and Lim (2013), in which being sexually assaulted as a child by someone of approximately the same age was still included as CSA.

For adult sexual assault (i.e., ASA, experienced by someone aged 14 years or older), 55.4% of the women endorsed at least one item on the SES (Koss et al., 2007; *n* = 150). The women reported their most severe experiences as follows: 12.6% (*n* = 34) experienced unwanted sexual contact (i.e., unwanted kissing or fondling without any attempted intercourse, and using verbal pressure, authority, physical threats, or physical force), 2.2% (*n* = 6) experienced attempted coerced sex (i.e., attempted sexual intercourse when verbal pressure or authority was used, but no physical force was used or threats to

use force), 4.4% (*n* = 12) experienced coerced sex (i.e., sexual intercourse when verbal pressure or authority was used, but no physical force was used or threats to use force), 8.9% (*n* = 24) experienced attempted rape, and 26.6% (*n* = 72) reported experiencing rape (i.e., non-consensual intercourse, including vaginal, anal, or oral, using force, threatening to use force, or when the person was intoxicated). The perpetrator was male in 97.8% (*n* = 136) of cases, and the perpetrators included both male and female offenders for 2.2% (*n* = 3) of the women.

Substance abuse scores. On the AUDIT, 43.2% (*n* = 117) of women scored in the problematic range for alcohol use (i.e., score of 8 or above; Saunders et al., 1993). Based on AUDIT scores, problematic alcohol use refers to harmful and hazardous drinking levels, as well as potential alcohol dependence and increased need for treatment (e.g., unable to stop drinking when you want to, needing a drink first thing in the morning, etc.; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; World Health Organization, 1992). For drug abuse, 15.9% (*n* = 43) of participants scored in the problematic range (i.e., DAST-10 score of 3 or above). In this case, problematic drug use (based on DAST-10 scores) refers to harmful drug use and possible need for intervention (e.g., unable to stop taking drugs when you want to, experiencing withdrawal symptoms after stopping, etc.; Cocco & Carey, 1998; Skinner, 1982).

The most frequently used drug was marijuana, with a total of 74.5% (*n* = 202) of participants ever having used marijuana. In the past year, 55% (*n* = 149) of participants reported using marijuana (see Table 3) and 74.2% (*n* = 201) of participants reporting its use prior to the past year (see Table 4).

Table 3

Frequencies of Illicit and Non-Medical Drug Use in the Past Year

Frequency of Drug Use	Marijuana % (*n*)	LSD % (*n*)	Ecstasy/MDMA % (*n*)	Hallucinogens (e.g., Mushrooms) % (*n*)	Cocaine % (*n*)	Crystal Methamphetamine % (*n*)	Inhalants % (*n*)	Heroin % (*n*)	NMU Pain Med % (*n*)	NMU Sleep Med % (*n*)	NMU Anx Med % (*n*)	NMU Stim Med % (*n*)
Never	45 (122)	98.2 (266)	85.2 (231)	88.9 (241)	91.5 (248)	100 (271)	100 (271)	100 (271)	94.5 (256)	97.8 (265)	97.1 (263)	92.3 (250)
1-2 times	17.3 (47)	1.9 (5)	7.8 (21)	7.8 (21)	4.8 (13)	0	0	0	1.9 (5)	1.5 (4)	2.2 (6)	5.2 (14)
3-5 times	11.4 (31)	0	2.6 (7)	3.3 (9)	1.9 (5)	0	0	0	3 (8)	0	0.4 (1)	2.2 (6)
6-9 times	7.4 (20)	0	1.5 (4)	0	0.4 (1)	0	0	0	0.4 (1)	0.4 (1)	0.4 (1)	0
10-19 times	7.8 (21)	0	2.2 (6)	0	0.7 (2)	0	0	0	0	0	0	0.4 (1)
20-39 times	2.2 (6)	0	0.7 (2)	0	0.7 (2)	0	0	0	0	0	0	0
40 or more times	8.9 (24)	0	0	0	0	0	0	0	0.4 (1)	0.4 (1)	0	0

Note. NMU = Non-Medical Use

Table 4

Frequencies of Illicit and Non-Medical Drug Use Prior to the Past Year

Frequency of Drug Use	Marijuana % (*n*)	LSD % (*n*)	Ecstasy/MDMA % (*n*)	Hallucinogens (e.g., Mushrooms) % (*n*)	Cocaine % (*n*)	Crystal Methamphetamine % (*n*)	Inhalants % (*n*)	Heroin % (*n*)	NMU Pain Med % (*n*)	NMU Sleep Med % (*n*)	NMU Anx Med % (*n*)	NMU Stim Med % (*n*)
Never	25.8 (70)	93.7 (254)	76 (206)	77.5 (210)	85.6 (232)	98.2 (266)	99.3 (269)	98.9 (268)	89.7 (243)	95.9 (260)	94.5 (256)	88.2 (239)
1-2 times	11.1 (30)	4.4 (12)	8.5 (23)	12.2 (33)	6.3 (17)	1.5 (4)	0.7 (2)	1.1 (3)	3.7 (10)	0.7 (2)	3 (8)	7 (19)
3-5 times	10.3 (28)	0.7 (2)	5.2 (14)	4.4 (12)	1.9 (5)	0	0	0	2.6 (7)	1.1 (3)	0.7 (2)	3 (8)
6-9 times	9.6 (26)	0	2.6 (7)	3.3 (9)	1.1 (3)	0	0	0	0.7 (2)	0.7 (2)	0.7 (2)	0.4 (1)
10-19 times	11.1 (30)	0.7 (2)	3.3 (9)	2.2 (6)	1.1 (3)	0	0	0	0.7 (2)	0.4 (1)	0.4 (1)	1.1 (3)
20-39 times	8.9 (24)	0.4 (1)	2.6 (7)	0.4 (1)	1.5 (4)	0	0	0	1.9 (5)	0.4 (1)	0	0
40 or more times	23.3 (63)	0	1.9 (5)	0	2.6 (7)	0.4 (1)	0	0	0.7 (2)	0.7 (2)	0.7 (2)	0.4 (1)

Note. NMU = Non-Medical Use

For other types of illicit drug use in the past year (see Table 3), the most commonly used drug was ecstasy, which was used by 14.8% (n = 40), followed by hallucinogens (e.g., mushrooms; 11.1%; n = 30), cocaine (8.5%; n = 23), and LSD (1.6%; n = 5). While none of the women reported using heroin in the past year, 3 women had used it prior to the last year. For other types of illicit drug use prior to the past year (see Table 4), the most commonly used drug was ecstasy (24%; n = 65), followed by hallucinogens (e.g., mushrooms; 22.5%; n = 61), cocaine (14.4%; n = 39), LSD (6.3%; n = 17), crystal methamphetamine (1.9%; n = 5), and inhalants (<1%; n = 2). Throughout the lifetime (i.e., in the past year and prior to the past year), ecstasy use was reported by 25.5% (n = 69) of participants, use of hallucinogens was reported by 24.7% (n = 67) of participants, cocaine use was reported by 14.8% (n = 40) of participants, LSD use was reported by 6.6% (n = 18) of participants, crystal methamphetamine use was reported by 1.9% (n = 5) of participants, and the use of inhalants was reported by <1% (n = 2) of participants.

Intercorrelations Between Demographic Variables and Variables of Interest.

The relations between demographic variables and the key independent and dependent variables (i.e., sexual victimization, attachment, substance abuse, and relationship satisfaction) were assessed using correlations for continuous variables (e.g., age) as well as one-way ANOVAs and chi-square analyses for categorical variables (e.g., ethnicity). Certain variables were collapsed across categories into fewer levels due to low cell frequencies.

Age. Age was positively correlated with CSA (r = .18, p = .003) and with Psyc-Neg from both parents combined (r = .13, p = .03). This indicates that older participants

reported higher frequencies of sexual abuse and psychological neglect when they were children. Age was also significantly correlated with drug abuse prior to the past year (r = .16, p = .01), but age was not significantly correlated with lifetime drug abuse and drug abuse in the past year. In addition, age was negatively correlated with alcohol abuse (r = -.13, p = .03). This suggests that older participants were more likely to score higher on drug abuse prior to the previous year, but younger participants were more likely to have higher alcohol abuse. Age was not significantly associated with any of the other key variables (i.e., ASA, CPA, Psyc-Ab, attachment avoidance, attachment anxiety, and relationship satisfaction; $p > .05$).

Ethnicity. A one-way ANOVA assessing the relation between ethnic affiliation and severity of CSA was not significant F (2, 268) = 0.34, p = .71. Thus, there were no differences found for CSA experiences among the different ethnic groups. Ethnicity consisted of Caucasian, Asian, and other (e.g., African-Canadian, Hispanic, mixed, etc). Ethnicities besides Caucasian and Asian were collapsed into the "other" category due to low cell frequencies. A chi-square analysis was also conducted to evaluate differences in ethnic background between those who have experienced contact CSA and those who have experienced non-contact CSA. There were no significant differences found between the percentages of women who endorsed contact versus no contact CSA and ethnic background (χ^2 [2, n = 270] = 0.06, p = .97).

A one-way ANOVA showed that ethnicity was not significantly associated with ASA, F (2, 264) = 0.47, p = .63). A chi-square analysis was then conducted to further evaluate differences in ethnic background between those who have experienced ASA and

those who have not experienced ASA. Rates of ASA did not differ according to ethnicity (χ^2 [2, n = 269] = 1.36, p = .51).

One-way ANOVAs further revealed that ethnicity was not significantly associated with attachment anxiety [F (2, 268) = 2.62, p = .08], attachment avoidance [F (2, 268) = 1.11, p = .33], and relationship satisfaction [F (2, 268) = 1.44, p = .24]. Ethnicity was, however, significantly related to alcohol abuse scores F (2, 268) = 4.29, p = .02. The strength of the association between ethnicity and alcohol abuse scores as assessed by the Partial Eta Squared was not very strong, with the ethnicity factor accounting for 3.1% of the variance of alcohol abuse. Follow-up tests were performed to assess pairwise differences among the means. Because equal variances were not assumed, Dunnett's C post-hoc test was used (Field, 2005). There was only a significant difference in mean score of alcohol abuse between Caucasians (M = 7.37, SD =4.64) and Asians (M = 4.63, SD = 3.75), with Caucasians reporting greater alcohol abuse than Asians. A chi-square analysis was then conducted to evaluate differences in ethnic background between those with non-problematic alcohol use (i.e., scores less than a cut-off of 8) and those with problematic alcohol use (i.e., scores of 8 or greater). The percentages of women in each alcohol use category did not differ according to ethnicity (χ^2 [2, n = 271] = 3.08, p = .21).

Ethnicity was also significantly related to drug abuse scores F (2, 268) = 3.04, p = .05. The strength of the association between ethnicity and drug abuse scores as assessed by the Partial Eta Squared was not very strong, with the ethnicity factor accounting for 2.2% of the variance of drug abuse. Dunnett's C post-hoc test showed that there was only a significant difference in mean score of drug abuse between Caucasians (M = 1.40, SD = 1.42) and Asians (M = 0.69, SD = 0.94), with Caucasians reporting greater drug

abuse than Asians. A chi-square analysis was then conducted to evaluate differences in ethnic background between those with no drug use ever (i.e., scores of 0), those with drug use that was not in the problem range (i.e., scores less than a cut-off of 3), and those with problem drug use (i.e., scores of 3 or greater). The percentages of women in each drug use category did not differ according to ethnicity (χ^2 [4, n = 271] = 5.10, p = .28).

Personal income. Due to a small number of participants reporting earning more than $10,000 annually (24.4%; n = 66), personal income of participants was collapsed into two levels: annual income of less than $10,000 and annual income of more than $10,000. All one-way ANOVAs assessing the relation between annual income and variables of interest were not found to be significant (p > .05).

Parental income. Parental income was collapsed into three levels based on the number of participants in each income range: less than $50,000 per year, $50,000 to $100,000 per year, and more than $100,000 per year. All one-way ANOVAs assessing the relation between annual parental income and variables of interest were found to be non-significant (p's > .05) except for alcohol abuse F (2,243) = 5.53, p = .004. The strength of the association between parental income and alcohol abuse scores as assessed by the Partial Eta Squared was not very strong, with the parental income factor accounting for 4.4% of the variance of alcohol abuse. Dunnett's C post-hoc test showed that there was a significant difference in mean score of alcohol abuse between those whose parents earned less than $50,000 ($M$ = 5.04, SD = 3.89) and those whose parents earned between $50,000 and $100,000 ($M$ = 7.29, SD = 4.87). There was also a significant difference in mean score of alcohol abuse between those who earned less than $50,000 and those who earned more than $100,000 ($M$ = 7.64, SD = 4.03). Thus, those

whose parents were in the lowest income category had the lowest alcohol abuse scores, and those whose parents were in the highest income category had the highest alcohol abuse scores.

In a correlation analysis using the full range of parental income levels (i.e., 11 levels), it was found to be negatively correlated with CPA (r = -.20, p = .001). Parental income was also negatively correlated with Psyc-Ab (r = -.12, p = .05) and Psyc-Neg (r = -.23, p < .001). Overall, this indicated that lower family income was correlated with more child maltreatment. Finally, parental income was positively correlated with alcohol abuse (r = .20, p = .001).

Relationship status. Although all participants in this study were in a relationship, they were grouped into three separate groups: never married; living with partner or married; and separated, divorced, or widowed. According to the results of a one-way ANOVA, no significant differences were found between relationship status categories and sexual victimization scores. A chi-square analysis was also conducted to evaluate differences in relationship status between those who have experienced CSA and those who have not experienced CSA. There were significant differences in relationship status found between the percentages of women who endorsed CSA versus those who did not (χ^2 [2, n = 260] = 9.92, p = .01). Comparing CSA survivors with non-survivors, 63.8% versus 78.5% were never married, 33.3% versus 21.5% were living with their partner or married, and 2.9% versus 0% were separated, divorced, or widowed, respectively. Follow-up pairwise comparisons (i.e., between the different groups of CSA, no CSA, never married, common law/married, and separated/divorced, or widowed) were conducted to assess the difference among these proportions, however comparisons with

the separated/divorced/widowed group were not included in the results as this group had too few participants ($n = 2$). There was a significant difference between those who were never married and those who were living together or married (χ^2 [1, $n = 258$] = 4.40, $p = .04$), which indicates that CSA survivors were more likely to have been currently married or living common-law and were less likely to be single or never married than the non-CSA group. A chi-square analysis was then conducted to evaluate differences in relationship status between those who have experienced ASA and those who have not experienced ASA. There were no significant association found between ASA and relationship status (χ^2 [2, $n = 260$] = 1.58, $p = .45$). Comparing ASA survivors with non-survivors, 74% versus 75.4% were never married, 24.7% versus 24.6% were living with their partner or married, and 1.4% versus 0% were separated, divorced, or widowed, respectively. .

According to the results of a one-way ANOVA, no significant differences were found between relationship status categories and CPA scores, nor were significant differences found between relationship status categories and Psyc-Ab scores. Relationship status was, however, associated with Psyc-Neg, F (2, 258) = 3.86, $p = .02$. The strength of the association between relationship status and Psyc-Neg scores as assessed by the Partial Eta Squared was not very strong, with the relationship status factor accounting for 2.9% of the variance of Psyc-Neg. Dunnett's C post-hoc test showed that there was a significant difference in Psyc-Neg between those who were never married ($M = 17.62$, $SD = 21.23$) and those who were separated, divorced, or widowed ($M = 54.50$, $SD = 2.12$). There was also a significant difference in Psyc-Neg between those who were living with their partner or married ($M = 23.81$, $SD = 30.11$) and

those who were separated, divorced, or widowed. Thus, those who were separated, divorced, or widowed reported more severe Psyc-Neg experiences than those who were never married and those who were common law or married.

No significant differences were found between relationship status categories and attachment or substance abuse variables. Relationship status was, however, associated with relationship satisfaction, F (2, 258) = 7.58, p = .001. The strength of the association between relationship status and relationship satisfaction scores as assessed by the Partial Eta Squared was not very strong, with the relationship status factor accounting for 5.5% of the variance of relationship satisfaction. Dunnett's C post-hoc test showed that there was only a significant difference in relationship satisfaction between those who were never married (M = 13.05, SD =1.99) and those who were common law or married (M = 14.04, SD = 1.55), with those who were married or common law reporting greater relationship satisfaction than those who were never married.

Sexual orientation. Sexual orientation was collapsed into two categories due to small numbers of participants who endorsed other than heterosexual orientations: heterosexual (n = 251) and not heterosexual (n = 20; e.g., lesbian, bisexual, asexual, etc.). Mean CSA scores were significantly different between the two groups, F (1, 269) = 22.64, p < .001, with those who identified as not heterosexual having higher CSA scores (M = 1.10, SD = 1.25) than those who were heterosexual (M = 0.27, SD = 0.69). The strength of the association between sexual orientation and CSA scores as assessed by the Partial Eta Squared was medium, with sexual orientation accounting for 7.8% of the variance of CSA. Similarly, mean ASA scores were significantly different between the two groups, F (1, 267) = 8.52, p = .004, with those who were not heterosexual having

higher ASA scores (M = 3.35, SD = 2.32) than those who were heterosexual (M = 1.89, SD = 2.14). The strength of the association between sexual orientation and ASA scores as assessed by the Partial Eta Squared was weak, with sexual orientation accounting for 3.1% of the variance of ASA.

Mean relationship satisfaction scores were also significantly different between heterosexual and non-heterosexual groups, F (1, 269) = 6.83, p = .001, with those who were heterosexual having higher relationship satisfaction scores (M = 13.32, SD = 1.89) than those who were not heterosexual (M = 12.15, SD = 2.41). The strength of the association between sexual orientation and relationship satisfaction scores as assessed by the Partial Eta Squared was weak, with sexual orientation accounting for 2.5% of the variance of relationship satisfaction.

Finally, mean drug abuse scores (based on DAST-10 lifetime scores) were significantly different between the two groups, F (1, 269) = 10.93, p = .001, with those who were not heterosexual having higher drug abuse scores (M = 2.28, SD = 2.01) than those who were heterosexual (M = 1.24, SD = 1.29). The strength of the association between sexual orientation and drug abuse scores as assessed by the Partial Eta Squared was weak, with sexual orientation accounting for 3.9% of the variance of drug abuse. A chi-square analysis was then conducted to evaluate differences in sexual orientation between those with non-problematic drug use (i.e., scores less than a cut-off of 3) and those with problematic drug use (i.e., scores of 3 or greater). There were significant differences in sexual orientation found between the percentages of women who had problematic drug use versus those who did not (χ^2 [2, n = 271] = 7.40, p = .03). Results indicated that 14.7% of heterosexuals had problematic drug use and 35% of non-

heterosexuals had problematic drug use. Follow-up pairwise comparisons (i.e., between the different groups of heterosexual, non-heterosexual, no drug use, non-problematic drug use, and problematic drug use) were conducted to assess the difference among these proportions, however they were not reported as the non-heterosexual no drug use group had too few participants ($n = 2$).

A chi-square analysis was further conducted to evaluate differences in sexual orientation between those with non-problematic alcohol use (i.e., scores less than a cut-off of 8) and those with problematic alcohol use (i.e., scores of 8 or greater). There were no significant differences in sexual orientation found between the percentages of women who had problematic alcohol use versus those who did not (χ^2 [1, $n = 271$] = 1.23, $p = .27$). Results indicated that 42.2% of heterosexuals had problematic alcohol use and 55% of non-heterosexuals had problematic alcohol use.

No significant differences between groups were found on any of the other key variables. Overall, age and parental income were the only demographic variables used as covariates (only when alcohol abuse was the outcome variable) because these variables were found to be significantly correlated with alcohol abuse (age: $r = -.13$, $p = .03$; parental income: $r = .20$, $p = .001$). Although ethnicity was significantly related to substance abuse scores (i.e., both alcohol and drug abuse), the strength of the association between ethnicity and substance abuse scores as assessed by the Partial Eta Squared was not very strong (e.g., ethnicity accounted for 3.1% of the variance of alcohol abuse and 2.2% of the variance of drug abuse). Ethnicity was therefore not included as a covariate. In addition, relationship status was associated with relationship satisfaction, however the strength of the association between relationship status and relationship satisfaction scores

as assessed by the Partial Eta Squared was not very strong (i.e., relationship status accounted for 5.5% of the variance of relationship satisfaction) and it was thus not included as a covariate. Relationship satisfaction was also significantly different between heterosexual and non-heterosexual groups, however the strength of the association between sexual orientation and relationship satisfaction scores was again weak, (i.e., sexual orientation accounted for 2.5% of the variance of relationship satisfaction) and sexual orientation was not included as a covariate either. This was similar for the association between sexual orientation and drug abuse (i.e., sexual orientation accounted for 3.9% of the variance of drug abuse).

Intercorrelations among Key Variables (i.e., Sexual Victimization, Attachment, Substance Abuse, and Relationship Satisfaction)

Correlations among the key variables are presented in Table 5. Significant correlations are discussed below.

Sexual victimization. In general, sexual victimization (both ASA and CSA) tended to be associated with all other types of abuse in childhood. More specifically, CSA was positively correlated with ASA, CPA, Psyc-Ab, Psyc-Neg, and drug abuse prior to the past year ($p < .05$; see Table 5 for specific r-values). The highest correlation for CSA was between CSA and Psyc-Neg ($r = .25$, $p < .001$). ASA was positively associated with CPA, Psyc-Ab, Psyc-Neg, attachment avoidance, attachment anxiety, drug abuse in the past year, drug abuse prior to the past year, lifetime drug abuse, and alcohol abuse. The highest correlation for ASA was between ASA and Psyc-Ab ($r = .35$, $p < .001$).

Table 5

Correlations among CSA, ASA, CPA, Psyc-Ab, Psyc-Neg, Attachment, Substance Abuse, and Relationship Satisfaction

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. CSA	–											
2. ASA	.22**	–										
3. CPA	.20**	.15*	–									
4. Psyc-Ab	.20**	.35**	.59**	–								
5. Psyc-Neg	.25**	.24**	.45**	.64**	–							
6. ECR Avoidant	.08	.20**	.13*	.22**	.10	–						
7. ECR Anxious	.09	.19**	.05	.17**	.17**	.33**	–					
8. Drug Abuse Past Year	-.01	.15*	-.02	.08	.08	.20**	.12	–				
9. Drug Abuse Prior to Past Year	.15*	.32**	.07	.22**	.24**	.20**	.15*	.53**	–			
10. Drug Abuse Ever	.10	.28**	.04	.18**	.19**	.23**	.15*	.84**	.91**	–		
11. Alcohol Abuse	-.01	.21**	-.07	.17**	.11	.18**	.19**	.46**	.41**	.49**	–	
12. Relationship Satisfaction	-.09	-.09	.14*	-.15*	-.18**	-.03	-.26**	-.01	-.01	-.01	-.05	–

Note. CSA = child sexual abuse, ASA = adult sexual assault, CPA = child physical abuse, Psyc-Ab = child psychological abuse, Psyc-Neg = child psychological neglect, ECR = Experiences in Close Relationships
* $p < .05$; ** $p < .01$

Attachment. Attachment avoidance and attachment anxiety were correlated with each other as well as with Psyc-Ab, ASA, drug abuse, and alcohol abuse. More specifically, attachment avoidance was positively associated with CPA, Psyc-Ab, attachment anxiety, drug abuse in the past year, drug abuse prior to the past year, lifetime drug abuse, and alcohol abuse. Attachment anxiety was positively correlated with Psyc-Ab, Psyc-Neg, drug abuse prior to the past year, lifetime drug abuse, and alcohol abuse. Attachment anxiety was negatively correlated with relationship satisfaction.

Substance abuse. Drug abuse in the past year was positively associated with drug abuse prior to the past year, lifetime drug abuse (since drug abuse in the past year is part of this variable), and alcohol abuse. Drug abuse prior to the past year was positively associated with Psyc-Ab, Psyc-Neg, lifetime drug abuse, and alcohol abuse. Lifetime drug abuse was positively correlated with Psyc-Ab, Psyc-Neg, and alcohol abuse. Alcohol abuse was also positively correlated with Psyc-Ab.

Relationship satisfaction. Women with a history of CPA, Psyc-Ab, and Psyc-Neg reported greater dissatisfaction with their relationships (i.e., relationship satisfaction was negatively correlated with CPA, Psyc-Ab, and Psyc-Neg).

Associations among Sexual Victimization, Attachment, Substance Abuse, and Relationship Satisfaction

Sexual victimization and attachment. Data were then analyzed using hierarchical multiple regression (HR) in SPSS version 21. As stated in hypothesis #1, the first analysis assessed whether sexual victimization in women (i.e., CSA and ASA, controlling for other forms of abuse) predicted greater avoidant attachment in close relationships. In each of the analyses that follow (except when otherwise specified),

other types of child maltreatment (i.e., total CPA from both parents combined, Psyc-Ab, and Psyc-Neg) were entered in step 1 and CSA and ASA were entered in step 2.[1] Attachment avoidance was entered as the dependent variable. The results showed that ASA and Psyc-Ab predicted greater attachment avoidance, indicating that women who experienced more severe ASA and Psyc-Ab reported more attachment avoidance in their relationships, controlling for other variables in the model, F (5, 263) = 3.75, p = .003, R^2 = .07 (see Table 6). However, sexual victimization (i.e., CSA and ASA) did not add significant variance above that of the other forms of child maltreatment, as the addition of the sexual victimization variables to the equation did not reliably improve R^2 (p = .08 for step 2; Tabachnick & Fidell, 2001).

The second analysis assessed whether sexual victimization (i.e., CSA and ASA, controlling for other forms of abuse) predicted anxious attachment (also as predicted in hypothesis #1). The analysis was significant, F (5, 263) = 3.31, p = .01, R^2 = .06 (see Table 7), but sexual victimization did not have a significant effect above and beyond the effect of the other types of child maltreatment (p = .08 for step 2), and the addition of sexual victimization to the equation did not reliably improve R^2 (Tabachnick & Fidell, 2001). Overall, however, women who experienced more severe ASA had greater attachment anxiety (i.e., ASA had a significant positive regression weight, which was similar to the previous analysis).

[1] Originally, a CSA-ASA interaction variable was entered in the last step of each analysis in order to provide additional information about the combined effect of sexual victimization of both types. However, there was not a significant improvement to the model by entering the interaction variable, as the addition of this variable to the equation did not reliably improve R^2. It was thus removed from each analysis.

Table 6

Hierarchical Multiple Regression Analysis for Child Maltreatment and Sexual Victimization Variables Predicting Avoidant Attachment (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.05**
CPA	0.09	0.35	.02	
Psyc-Neg	-0.02	0.03	-.06	
Psyc-Ab	0.10	0.04	.24**	
Step 2				.07 (.02)
CPA	0.13	0.35	.03	
Psyc-Neg	-0.03	0.03	-.07	
Psyc-Ab	0.08	0.04	.19*	
CSA	0.36	0.73	.03	
ASA	0.56	0.27	.13*	

Note. * $p < .05$. ** $p < .01$.

Table 7

Hierarchical Multiple Regression Analysis for Child Maltreatment and Sexual Victimization Variables Predicting Anxious Attachment (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.83	0.76	-.08	
Psyc-Neg	0.10	0.07	.11	
Psyc-Ab	0.13	0.08	.15	
Step 2				.06 (.02)
CPA	-0.75	0.76	-.07	
Psyc-Neg	0.08	0.07	.10	
Psyc-Ab	0.09	0.08	.10	
CSA	1.00	1.60	.04	
ASA	1.20	0.59	.13*	

Note. * $p < .05$.

Sexual victimization and substance abuse. As predicted in hypothesis #2, women who experienced sexual victimization (i.e., CSA and ASA, controlling for other forms of abuse) engaged in greater levels of drug abuse (i.e., DAST-10 or lifetime drug abuse was the dependent variable). The analysis was significant, F (5, 263) = 5.95, p < .001, R^2 = .10 (see Table 8) and showed that sexual victimization accounted for a significant proportion of the variance in harmful drug use above and beyond other types of child maltreatment, and that women who experienced more severe ASA engaged in greater levels of drug abuse (which was similar to the previous two analyses).

The fourth analysis assessed whether women who experienced sexual victimization (i.e., CSA and ASA, controlling for other forms of abuse) engaged in greater levels of harmful alcohol use (i.e., AUDIT; also as predicted in hypothesis #2). Demographic control variables (i.e., age and parental income) were entered in step 1 of the analysis because these variables were found to be significantly correlated with alcohol abuse (age: r = -.13, p = .03; parental income: r = .20, p = .001). Other types of child maltreatment (i.e., CPA, Psyc-Ab, and Psyc-Neg) were entered in step 2, CSA and ASA were entered in step 3, and alcohol abuse was entered as the dependent variable. The analysis was significant, F (7, 261) = 6.54, p < .001, R^2 = .15 (see Table 9), and showed that sexual victimization accounted for a significant proportion of the variance in alcohol abuse above and beyond other types of child maltreatment, and women who experienced more severe ASA and Psyc-Ab engaged in greater levels of alcohol abuse (i.e., similar to the first analysis, these variables had significant positive regression weights), while those who experienced more severe CPA engaged in lower levels of alcohol abuse (i.e., the regression weight of CPA was significant and negative, unlike the previous analyses).

Table 8

Hierarchical Multiple Regression Analysis for Child Maltreatment and Sexual Victimization Variables Predicting Drug Abuse (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.05**
CPA	-0.09	0.05	-.13	
Psyc-Neg	0.01	0.01	.15	
Psyc-Ab	0.01	0.01	.16	
Step 2				.10 (.05**)
CPA	-0.08	0.05	-.11	
Psyc-Neg	0.01	< 0.01	.14	
Psyc-Ab	< 0.01	0.01	.07	
CSA	0.03	0.11	.02	
ASA	0.15	0.04	.24***	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9

Hierarchical Multiple Regression Analysis for Child Maltreatment and Sexual Victimization Variables Predicting Alcohol Abuse (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.05**
Age	-0.14	0.07	-.12	
Parental Income	0.30	0.09	.19**	
Step 2				.13 (.07***)
Age	-0.14	0.07	-.12*	
Parental Income	0.32	0.09	.20**	
CPA	-0.51	0.17	-.22**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.05	0.02	.26**	
Step 3				.15 (.02*)
Age	-0.15	0.07	-.13*	
Parental Income	0.30	0.09	.19**	
CPA	-0.47	0.17	-.20**	
Psyc-Neg	0.02	0.01	.10	
Psyc-Ab	0.04	0.02	.20*	
CSA	-0.24	0.36	-.04	
ASA	0.34	0.13	.16*	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Furthermore, women who were younger and whose parents had higher incomes engaged in greater alcohol abuse.

Sexual victimization and relationship satisfaction. As stated in hypothesis #3, the next analysis assessed whether sexual victimization (i.e., CSA and ASA; controlling for other forms of abuse) predicted lower reported relationship satisfaction (i.e., the dependent variable). Sexual victimization did not predict lower relationship satisfaction above and beyond other types of child maltreatment, F (5, 263) = 2.24, p = .05, R^2 = .04 (see Table 10).

Substance abuse and relationship satisfaction. Finally, as stated in hypothesis #4, a regression was conducted to assess whether greater substance abuse (i.e., drug and alcohol abuse) predicted lower relationship satisfaction. Alcohol abuse (i.e., AUDIT) and lifetime drug abuse (i.e., DAST-10) were entered as the independent variables, while relationship satisfaction was entered as the dependent variable. Greater substance abuse did not predict lower relationship satisfaction, F (2, 268) = 0.41, p = .67, R^2 < 0.01 (see Table 11).

Table 10

Hierarchical Multiple Regression Analysis for Child Maltreatment and Sexual Victimization Variables Predicting Relationship Satisfaction (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	< -0.01	0.01	-.02	
Step 2				.04 (< 0.01)
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.13	
Psyc-Ab	0.00	0.01	-.01	
CSA	-0.11	0.16	-.04	
ASA	-0.03	0.06	-.04	

Note. * $p < .05$.

Table 11

Regression Analysis for Substance Abuse Variables Predicting Relationship Satisfaction (N = 271)

Variable	*B*	*SE B*	*β*	R^2
				< 0.01
Drug Abuse	0.03	0.10	.02	
Alcohol Abuse	-0.03	0.03	-.06	

Assessment of the Mediating Role of Attachment in the Relation between Sexual Victimization and Substance Abuse and Sexual Victimization and Relationship Satisfaction

Contrary to the predictions of hypothesis #5, insecure attachment did not have a mediating role in the relation between sexual victimization and drug abuse, F (8, 260) = 5.43, $p < .001$, and sexual victimization and alcohol abuse, F (10, 258) = 5.35, $p < .001$ (based on findings from hierarchical regressions). Follow up Sobel tests were also performed in order to test for partial mediation, however results were once again not significant. In addition, although hypothesis #5 predicted that attachment style would mediate the relation between sexual victimization and relationship satisfaction, no significant relation was found between these variables. Therefore, no mediation could be assessed.

Assessment of the Moderating Role of Attachment in the Relation between Sexual Victimization and Substance Abuse and Sexual Victimization and Relationship Satisfaction

Because the hypothesized mediating role of attachment was not supported, post hoc analyses were conducted in order to further explore the relations among sexual victimization, substance abuse, relationship satisfaction, and attachment style. Specifically, these post hoc analyses assessed the moderating role of attachment (i.e., anxious and avoidant) in the relation between sexual victimization (i.e., CSA and ASA) and substance abuse (i.e., drug and alcohol abuse) and sexual victimization and relationship satisfaction. Prior to performing the moderation analyses using hierarchical regression, CSA, ASA, attachment anxiety, and attachment avoidance were centred by

subtracting the mean of each variable from participants' raw scores. These centred variables were used in the regression models testing moderation.

Anxious attachment style as a moderator in the relation between CSA and drug abuse. The first moderation analysis assessed the role of anxious attachment style as a moderator in the relation between CSA and harmful drug use. First, other types of child maltreatment (i.e., CPA, Psyc-Ab, and Psyc-Neg) were entered in step 1, CSA and anxious attachment were entered in step 2, and a CSA-anxious attachment interaction variable was entered in step 3. Similar procedures were also followed (with the appropriate variables) for the rest of the moderation analyses. Lifetime drug abuse (i.e., DAST-10) was entered as the dependent variable. The analysis was significant, F (6, 264) = 4.04, p = .001, R^2 = .08 (see Table 12), and the interaction between CSA and anxious attachment accounted for a significant proportion of the variance in drug abuse above and beyond other types of child maltreatment. That is, women who experienced more severe CSA and anxious attachment engaged in greater levels of harmful drug use (see Figure 1). Therefore support was found for anxious attachment as a moderator in the relation between CSA and drug abuse.

Table 12

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between CSA and Drug Abuse (N = 269)

Variable	*B*	*SE B*	*β*	R^2 (ΔR^2)
Step 1				.05**
CPA	-0.09	0.05	-.12	
Psyc-Neg	0.01	0.01	.15	
Psyc-Ab	0.01	0.01	.15	
Step 2				.07 (.01)
CPA	-0.08	0.05	-.12	
Psyc-Neg	0.01	0.01	.13	
Psyc-Ab	0.01	0.01	.13	
CSA	0.09	0.11	.05	
Anxious Attachment	0.01	<0.01	.11	
Step 3				.08 (.02*)
CPA	-0.06	0.05	-.09	
Psyc-Neg	0.01	0.01	.14	
Psyc-Ab	0.01	0.01	.13	
CSA	0.02	0.11	.01	
Anxious Attachment	0.01	<0.01	.10	
CSA x Anxious Attachment	0.01	0.01	.15*	

Note. * $p < .05$. ** $p < .01$.

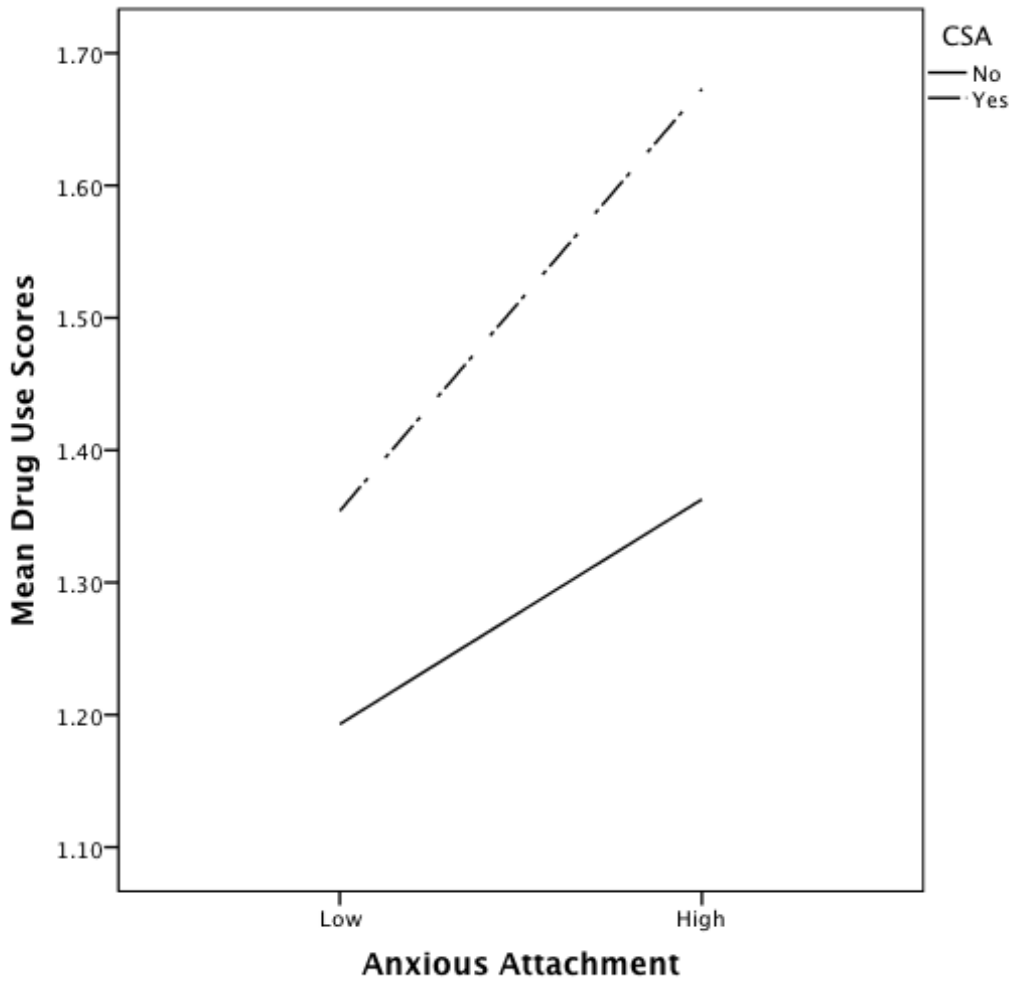

Figure 1. Interaction between attachment anxiety and drug abuse (DAST-10) for women with and without a history of CSA.

Avoidant attachment style as a moderator in the relation between CSA and drug abuse. The second moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between CSA and drug abuse, and the same procedures were followed as the first moderation. Again, lifetime drug abuse (i.e., DAST-10) was entered as the dependent variable. The analysis was significant, F (6, 264) = 4.67, $p < .001$, $R^2 = .10$ (see Table 13). In addition, both Psyc-Neg and avoidant attachment variables predicted drug abuse, indicating that women who experienced greater Psyc-Neg and those who had greater avoidant attachment engaged in greater levels of harmful drug use, while controlling for other variables in the model. CSA was not significantly related to drug abuse (i.e., it did not contribute to the prediction of lifetime drug abuse). Furthermore, the interaction between CSA and avoidant attachment did not account for a significant proportion of the variance in drug abuse above and beyond other types of child maltreatment. Thus, avoidant attachment was not found to be a moderator in the relation between CSA and drug abuse.

Table 13

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between CSA and Drug Abuse (N = 269)

Variable	*B*	*SE B*	*β*	R^2 (ΔR^2)
Step 1				.05**
CPA	-0.09	0.05	-.12	
Psyc-Neg	0.01	0.01	.15	
Psyc-Ab	0.01	0.01	.15	
Step 2				.09 (.04**)
CPA	-0.09	0.05	-.13	
Psyc-Neg	0.01	0.01	.15*	
Psyc-Ab	0.01	0.01	.10	
CSA	0.08	0.11	.05	
Avoidant Attachment	0.03	0.01	.20**	
Step 3				.10 (<.01)
CPA	-0.09	0.05	-.12	
Psyc-Neg	0.01	0.01	.15*	
Psyc-Ab	0.01	0.01	.10	
CSA	0.06	0.11	.03	
Avoidant Attachment	0.03	0.01	.21**	
CSA x Avoidant Attachment	0.01	0.02	.05	

Note. * $p < .05$. ** $p < .01$.

Anxious attachment style as a moderator in the relation between ASA and drug abuse. The third moderation analysis assessed the role of anxious attachment style as a moderator in the relation between ASA and drug abuse (i.e., the dependent variable). The analysis was significant, F (6, 262) = 5.84, $p < .001$, $R^2 = .12$ (see Table 14). In addition, ASA predicted drug abuse, indicating that women who experienced more severe ASA engaged in greater levels of harmful drug use. However, the interaction between ASA and anxious attachment did not account for a significant proportion of the variance in drug abuse above and beyond other types of child maltreatment. Thus, anxious attachment was not found to be a moderator in the relation between ASA and drug abuse.

Avoidant attachment style as a moderator in the relation between ASA and drug use. The fourth moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between ASA and drug abuse (i.e., the dependent variable). The analysis was significant, F (6, 262) = 6.90, $p < .001$, $R^2 = .14$ (see Table 15). In addition, women who experienced more severe ASA, avoidant attachment, and Psyc-Neg engaged in greater levels of harmful drug use (as these variables all had significant positive regression weights). This is similar to the second moderation analysis, except that this time ASA had a significant regression weight, while in the second moderation analysis, CSA was not significant. However, the interaction between ASA and avoidant attachment did not account for a significant proportion of the variance in drug abuse above and beyond other types of child maltreatment. Thus, avoidant attachment was not found to be a moderator in the relation between ASA and drug abuse.

Table 14

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between ASA and Drug Abuse (N = 269)

Variable	*B*	*SE B*	*β*	R^2 (ΔR^2)
Step 1				.05**
CPA	-0.09	0.05	-.13	
Psyc-Neg	0.01	0.01	.15	
Psyc-Ab	0.01	0.01	.16	
Step 2				.11 (.06***)
CPA	-0.07	0.05	-.10	
Psyc-Neg	0.01	<0.01	.13	
Psyc-Ab	<0.01	0.01	.06	
ASA	0.14	0.04	.23***	
Anxious Attachment	0.01	<0.01	.09	
Step 3				.12 (.01)
CPA	-0.07	0.05	-.10	
Psyc-Neg	0.01	<0.01	.13	
Psyc-Ab	<0.01	0.01	.06	
ASA	0.14	0.04	.23***	
Anxious Attachment	0.01	<0.01	.08	
ASA x Anxious Attachment	<0.01	<0.01	.10	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 15

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between ASA and Drug Abuse (N = 269)

Variable	*B*	*SE B*	*β*	R^2 (ΔR^2)
Step 1				.05**
CPA	-0.09	0.05	-.13	
Psyc-Neg	0.01	0.01	.15	
Psyc-Ab	0.01	0.01	.16	
Step 2				.14 (.08***)
CPA	-0.08	0.05	-.11	
Psyc-Neg	0.01	<0.01	.15*	
Psyc-Ab	<0.01	0.01	.03	
ASA	0.13	0.04	.21**	
Avoidant Attachment	0.03	0.01	.19**	
Step 3				.14 (<.01)
CPA	-0.08	0.05	-.11	
Psyc-Neg	0.01	<0.01	.16*	
Psyc-Ab	<0.01	0.01	.02	
ASA	0.13	0.04	.21**	
Avoidant Attachment	0.03	0.01	.19**	
ASA x Avoidant Attachment	<0.01	<0.01	.04	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Anxious attachment style as a moderator in the relation between CSA and alcohol abuse. The following moderation analysis assessed the role of anxious attachment style as a moderator in the relation between CSA and problematic alcohol use. Demographic control variables (i.e., age and parental income) were entered in step 1 of the analysis because these variables were found to be significantly correlated with the outcome variable (as indicated earlier), and other types of child maltreatment (i.e., CPA, Psyc-Ab, and Psyc-Neg) were also entered in step 1. CSA and anxious attachment were entered in step 2, a CSA-anxious attachment interaction variable was entered in step 3, and lifetime alcohol abuse (i.e., AUDIT) was entered as the dependent variable. Similar procedures were also followed (with the appropriate variables) for the rest of the moderation analyses in which alcohol abuse was the dependent variable. The analysis was significant, F (8, 262) = 5.66, $p < .001$, $R^2 = .15$ (see Table 16). In addition, women who experienced more severe CPA engaged in lower levels of harmful alcohol use. Women who experienced more severe Psyc-Ab and anxious attachment engaged in greater levels of alcohol abuse (i.e., the regression weights of these variables was significant and positive), but CSA was not significantly related to alcohol abuse. Furthermore, women whose parents had higher incomes engaged in greater alcohol abuse. However, the interaction between CSA and anxious attachment did not account for a significant proportion of the variance in alcohol use above and beyond other types of child maltreatment. Thus, anxious attachment was not found to moderate the relation between CSA and alcohol abuse.

Table 16

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between CSA and Alcohol Abuse (N = 269)

Variable	*B*	*SE B*	*β*	R^2 (ΔR^2)
Step 1				.13***
Age	-0.14	0.07	-.12*	
Parental Income	0.32	0.09	.21**	
CPA	-0.51	0.17	-.22**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.05	0.02	.26**	
Step 2				.15 (.02)
Age	-0.12	0.07	-.10	
Parental Income	0.32	0.09	.21**	
CPA	-0.48	0.17	-.20**	
Psyc-Neg	0.02	0.02	.09	
Psyc-Ab	0.05	0.02	.24**	
CSA	-0.17	0.35	-.03	
Anxious Attachment	0.03	0.01	.14*	
Step 3				.15 (<.01)
Age	-0.11	0.07	-.09	
Parental Income	0.32	0.09	.21**	
CPA	-0.46	0.17	-.20**	
Psyc-Neg	0.02	0.02	.09	
Psyc-Ab	0.05	0.02	.24**	
CSA	-0.24	0.37	-.04	
Anxious Attachment	0.03	0.01	.14*	
CSA x Anxious Attachment	0.01	0.02	.04	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Avoidant attachment style as a moderator in the relation between CSA and alcohol abuse. The next moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between CSA and alcohol abuse (i.e., the dependent variable). The analysis was significant, F (8, 262) = 5.62, $p < .001$, $R^2 = .15$ (see Table 17). In addition, women who experienced more severe CPA engaged in lower levels of harmful alcohol use (i.e., similar to the previous analysis, the regression weight of CPA was significant and negative). Women who experienced more severe Psyc-Ab and avoidant attachment engaged in greater levels of alcohol abuse (i.e., these variables had significant positive regression weights), but CSA was not significantly related to alcohol abuse (i.e., it did not contribute to the model). This is also similar to the previous analysis. Furthermore, women whose parents had higher incomes engaged in greater alcohol abuse. Finally, women who were older engaged in lower levels of alcohol abuse. Overall however, the interaction between CSA and avoidant attachment did not account for a significant proportion of the variance in alcohol abuse above and beyond other types of child maltreatment. Thus, avoidant attachment was not found to be a moderator in the relation between CSA and problematic alcohol use.

Table 17

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between CSA and Alcohol Abuse (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.13***
Age	-0.14	0.07	-.12*	
Parental Income	0.32	0.09	.21**	
CPA	-0.51	0.17	-.22**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.05	0.02	.26**	
Step 2				.15 (.02)
Age	-0.15	0.07	-.13*	
Parental Income	0.29	0.09	.19**	
CPA	-0.51	0.17	-.22*	
Psyc-Neg	0.02	0.02	.11	
Psyc-Ab	0.05	0.02	.23**	
CSA	-0.14	0.35	-.02	
Avoidant Attachment	0.07	0.03	.14*	
Step 3				.15 (<.01)
Age	-0.15	0.07	-.13*	
Parental Income	0.29	0.09	.19**	
CPA	-0.51	0.17	-.22**	
Psyc-Neg	0.02	0.02	.11	
Psyc-Ab	0.05	0.02	.23**	
CSA	-0.12	0.37	-.02	
Avoidant Attachment	0.07	0.03	.14*	
CSA x Avoidant Attachment	-0.01	0.05	-.01	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Anxious attachment style as a moderator in the relation between ASA and alcohol abuse. The following moderation analysis assessed the role of anxious attachment style as a moderator in the relation between ASA and alcohol abuse (i.e., the dependent variable). The analysis was significant, F (8, 260) = 6.28, $p < .001$, $R^2 = .16$ (see Table 18). In addition, women who experienced more severe CPA engaged in lower levels of alcohol abuse (as demonstrated by the significant negative regression weight of CPA). Women who experienced more severe ASA, Psyc-Ab, and anxious attachment engaged in greater levels of harmful alcohol use (i.e., the regression weights of these variables was significant and positive). These findings are similar to the previous analyses, except that in this case ASA had a significant regression weight, while previously CSA did not. Furthermore, women whose parents had higher incomes engaged in greater alcohol abuse. Finally, women who were older engaged in lower levels of alcohol abuse. Overall however, the interaction between ASA and anxious attachment did not account for a significant proportion of the variance in alcohol abuse above and beyond other types of child maltreatment. Thus, anxious attachment was not found to be a moderator in the relation between ASA and alcohol abuse.

Table 18

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between ASA and Alcohol Abuse (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.13***
Age	-0.14	0.07	-.12*	
Parental Income	0.32	0.09	.20**	
CPA	-0.51	0.17	-.22**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.05	0.02	.26**	
Step 2				.16 (.03**)
Age	-0.14	0.07	-.12*	
Parental Income	0.30	0.09	.19**	
CPA	-0.46	0.17	-.20**	
Psyc-Neg	0.02	0.02	.08	
Psyc-Ab	0.04	0.02	.19*	
ASA	0.29	0.13	.14*	
Anxious Attachment	0.03	0.01	.12*	
Step 3				.16 (<.01)
Age	-0.15	0.07	-.12*	
Parental Income	0.30	0.09	.19**	
CPA	-0.46	0.17	-.20**	
Psyc-Neg	0.02	0.02	.08	
Psyc-Ab	0.04	0.02	.19*	
ASA	0.29	0.13	.14*	
Anxious Attachment	0.03	0.01	.12*	
ASA x Anxious Attachment	<-0.01	0.01	-.03	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Avoidant attachment style as a moderator in the relation between ASA and alcohol abuse. The next moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between ASA and alcohol abuse (i.e., the dependent variable). The analysis was significant, F (8, 260) = 6.38, $p < .001$, $R^2 = .16$ (see Table 19). As noted earlier, women who experienced more severe CPA engaged in lower levels of alcohol abuse (i.e., the regression weight of CPA was significant and negative). Women who experienced more severe ASA and avoidant attachment engaged in greater levels of problematic alcohol use (i.e., these variables had significant positive regression weights). Furthermore, women whose parents had higher incomes engaged in greater alcohol use. Finally, women who were older engaged in lower levels of alcohol abuse. These findings are similar to the previous analyses, except in this case Psyc-Ab was not significantly related to harmful alcohol use. Overall however, the interaction between ASA and avoidant attachment did not account for a significant proportion of the variance in alcohol abuse above and beyond other types of child maltreatment. Thus, avoidant attachment was not found to be a moderator in the relation between ASA and alcohol abuse.

Table 19

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between ASA and Alcohol Abuse (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.13***
Age	-0.14	0.07	-.12*	
Parental Income	0.32	0.09	.20**	
CPA	-0.51	0.17	-0.22**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.05	0.02	.26**	
Step 2				.16 (.04**)
Age	-0.17	0.07	-.14*	
Parental Income	0.27	0.09	.18**	
CPA	-0.49	0.17	-.21**	
Psyc-Neg	0.02	0.02	.10	
Psyc-Ab	0.04	0.02	.18*	
ASA	0.30	0.13	.14*	
Avoidant Attachment	0.07	0.03	.13*	
Step 3				.16 (<.01)
Age	-0.17	0.07	-.14*	
Parental Income	0.28	0.09	.18**	
CPA	-0.49	0.17	-.21**	
Psyc-Neg	0.02	0.02	.11	
Psyc-Ab	0.04	0.02	.17	
ASA	0.30	0.13	.14*	
Avoidant Attachment	0.07	0.03	.13*	
ASA x Avoidant Attachment	0.01	0.01	.03	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Anxious attachment style as a moderator in the relation between CSA and relationship satisfaction. The next moderation analysis assessed the role of anxious attachment style as a moderator in the relation between CSA and relationship satisfaction. Relationship satisfaction was entered as the dependent variable. The analysis was significant, F (6, 264) = 4.59, $p < .001$, $R^2 = .09$ (see Table 20). In addition, women who experienced greater anxious attachment reported lower relationship satisfaction (as demonstrated by the significant negative regression weight of anxious attachment) and CSA was not significantly related to relationship satisfaction (i.e., it did not contribute to the model). Overall however, the interaction between CSA and anxious attachment did not account for a significant proportion of the variance in relationship satisfaction above and beyond other types of child maltreatment. Thus, anxious attachment was not found to be a moderator in the relation between CSA and relationship satisfaction.

Avoidant attachment style as a moderator in the relation between CSA and relationship satisfaction. The next moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between CSA and relationship satisfaction (i.e., the dependent variable). The analysis was not significant, F (6, 264) = 1.78, $p = .10$, $R^2 = .04$ (see Table 21) and CSA was not significantly related to relationship satisfaction (i.e., it did not contribute to the model). Furthermore, the interaction between CSA and avoidant attachment did not account for a significant proportion of the variance in relationship satisfaction above and beyond other types of child maltreatment and none of the child maltreatment variables were significantly related to relationship satisfaction. Thus, avoidant attachment was not found to be a moderator in the relation between CSA and relationship satisfaction.

Table 20

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between CSA and Relationship Satisfaction (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.06	0.08	-.06	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	<-0.01	0.01	-.02	
Step 2				.09 (.06***)
CPA	-0.08	0.07	-.08	
Psyc-Neg	-0.01	0.01	-.11	
Psyc-Ab	<0.01	0.01	.02	
CSA	-0.08	0.15	-.03	
Anxious Attachment	-0.02	0.01	-.24***	
Step 3				.09 (<.01)
CPA	-0.08	0.08	-.08	
Psyc-Neg	-0.01	0.01	-.10	
Psyc-Ab	<0.01	0.01	.01	
CSA	-0.10	0.16	-.04	
Anxious Attachment	-0.02	0.01	-.24***	
CSA x Anxious Attachment	<0.01	0.01	.03	

Note. * $p < .05$. *** $p < .001$.

Table 21

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between CSA and Relationship Satisfaction (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.06	0.08	-.06	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	<-0.01	0.01	-.02	
Step 2				.04 (<.01)
CPA	-0.06	0.08	-.06	
Psyc-Neg	-0.01	0.01	-.13	
Psyc-Ab	<-0.01	0.01	-.02	
CSA	-0.12	0.16	-.05	
Avoidant Attachment	<0.01	0.01	<.01	
Step 3				.04 (<.01)
CPA	-0.06	0.08	-.06	
Psyc-Neg	-0.01	0.01	-.13	
Psyc-Ab	<-0.01	0.01	-.02	
CSA	-0.12	0.16	-.05	
Avoidant Attachment	<0.01	0.01	<.01	
CSA x Avoidant Attachment	<0.01	0.02	<.01	

Note. * $p < .05$.

Anxious attachment style as a moderator in the relation between ASA and relationship satisfaction. The following moderation analysis assessed the role of anxious attachment style as a moderator in the relation between ASA and relationship satisfaction (i.e., the dependent variable). The analysis was significant, F (6, 262) = 4.41, $p < .001$, $R^2 = .09$ (see Table 22). In addition, women with greater levels of anxious attachment reported lower levels of relationship satisfaction (i.e., anxious attachment had a significant negative regression weight) and ASA was not significantly related to relationship satisfaction (i.e., it did not contribute to the model). These findings are similar to the analysis examining anxious attachment as a moderator in the association between CSA and relationship satisfaction. Overall however, the interaction between ASA and anxious attachment did not account for a significant proportion of the variance in relationship satisfaction above and beyond other types of child maltreatment. Thus, anxious attachment was not found to be a moderator in the relation between ASA and relationship satisfaction.

Table 22

Hierarchical Multiple Regression Analysis for Anxious Attachment as a Moderator in the Relation between ASA and Relationship Satisfaction (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	<-0.01	0.01	-.02	
Step 2				.09 (.05**)
CPA	-0.09	0.07	-.09	
Psyc-Neg	-0.01	0.01	-.11	
Psyc-Ab	<-0.01	0.01	.02	
ASA	-0.01	0.06	-.01	
Anxious Attachment	-0.02	0.01	-.24***	
Step 3				.09 (<.01)
CPA	-0.09	0.07	-.09	
Psyc-Neg	-0.01	0.01	-.11	
Psyc-Ab	<0.01	0.01	.02	
ASA	-0.01	0.06	-.01	
Anxious Attachment	-0.02	0.01	-.24***	
ASA x Anxious Attachment	<-0.01	<0.01	-.01	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Avoidant attachment style as a moderator in the relation between ASA and relationship satisfaction. The last moderation analysis assessed the role of avoidant attachment style as a moderator in the relation between ASA and relationship satisfaction. Relationship satisfaction was again entered as the dependent variable. The analysis was not significant, F (6, 262) = 1.79, p = .10, R^2 = .04 (see Table 23) and ASA was not significantly related to relationship satisfaction (i.e., it did not contribute to the model). The interaction between ASA and avoidant attachment did not account for a significant proportion of the variance in relationship satisfaction above and beyond other types of child maltreatment. Thus, avoidant attachment was not found to be a moderator in the relation between ASA and relationship satisfaction.

Table 23

Hierarchical Multiple Regression Analysis for Avoidant Attachment as a Moderator in the Relation between ASA and Relationship Satisfaction (N = 269)

Variable	*B*	*SE B*	*B*	R^2 (ΔR^2)
Step 1				.04*
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	<-0.01	0.01	-.02	
Step 2				.04 (<.01)
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.14	
Psyc-Ab	<0.01	0.01	-.01	
ASA	-0.04	0.06	-.04	
Avoidant Attachment	<0.01	0.01	.01	
Step 3				.04 (<.01)
CPA	-0.07	0.08	-.07	
Psyc-Neg	-0.01	0.01	-.13	
Psyc-Ab	<-0.01	0.01	-.01	
ASA	-0.04	0.06	-.04	
Avoidant Attachment	<0.01	0.01	.01	
ASA x Avoidant Attachment	<0.01	0.01	.02	

Note. * $p < .05$.

Discussion

This study examined the interrelations among sexual victimization (i.e., CSA and ASA, while controlling for other types of maltreatment), adult insecure attachment styles (i.e., anxious and avoidant), relationship satisfaction, and substance use problems (i.e., drug and alcohol abuse) in women who are in romantic (mostly heterosexual) relationships. More specifically, this study assessed attachment style as a moderator in the relation between sexual victimization and harmful substance use and between sexual victimization and relationship satisfaction. Contrary to expectations, a history of CSA was not predictive of subsequent attachment insecurity, nor was CSA on its own predictive of substance use problems or lower relationship satisfaction. However, women who experienced more severe ASA and child psychological abuse reported greater attachment avoidance and attachment anxiety in their relationships. In addition, women who experienced more severe ASA and child psychological abuse also engaged in greater levels of drug and alcohol abuse. Contrary to predictions, sexual victimization did not predict lower relationship satisfaction above and beyond other types of child maltreatment, and greater substance abuse did not predict lower relationship satisfaction.

We also found that women who experienced both more severe CSA and anxious attachment together engaged in greater levels of harmful drug use. Therefore support was shown for anxious attachment as a moderator in the relation between CSA and drug abuse. Contrary to anxious attachment however, avoidant attachment did not moderate the link between CSA and drug abuse. Furthermore, attachment insecurity (i.e., both anxious attachment and avoidant attachment) did not moderate the relation between ASA and substance abuse (i.e., both drug and alcohol abuse), nor did it moderate the relation

between CSA and alcohol abuse. Finally, attachment insecurity did not moderate the association between sexual victimization and relationship satisfaction. However, there were direct links found between attachment insecurity and relationship satisfaction, and women with greater levels of anxious attachment reported lower levels of relationship satisfaction.

Prevalence Rates and Means

The CSA prevalence in this sample of 18.5% was very similar to the prevalence of 19% reported in a study by Runtz (2002), which also used a self-report CSA measure in an undergraduate sample of Canadian women. ASA (i.e., unwanted sexual experiences from the age of 14 years or older) was experienced at least once by 55.4% of the women in this study. This is considerably higher than the prevalence in a study by Walsh and colleagues (2012), which found that 33.5% of undergraduate women reported ASA (i.e., 14 years or older, which is the same as the current study). A study by Gross, Winslett, Roberts, and Gohm (2006) found that 27% of undergraduate women reported experiencing some form of ASA (i.e., experiencing unwanted sexual contact that ranged from kissing and fondling to oral, vaginal, or anal intercourse). However the study by Gross and colleagues examined ASA experiences that occurred after participants enrolled in college, while the current study examined ASA experiences since the age of 14. Perhaps this might partially explain why the current study's ASA prevalence was higher.

The mean score for problematic alcohol use in the current study was 7.00 (*SD* = 4.56). According to Babor, Higgins-Biddle, Saunders, and Monteiro (2001), scores of 0 to 7 fall within the low risk drinking range. The present study's mean is similar to the mean alcohol abuse score of 6.66 (*SD* = 5.37) among undergraduate women, which was

reported in a study by Sylvers and colleagues (2011). In our sample, 43.2% of the women scored in the problematic range for alcohol use. Based on AUDIT scores, problematic alcohol use refers to harmful and hazardous drinking levels, as well as potential alcohol dependence and increased need for treatment (e.g., unable to stop drinking when you want to, needing a drink first thing in the morning, etc.; Babor et al., 2001; World Health Organization, 1992). This is much higher than a previous study assessing undergraduate Canadian students, which found that based on the same cut-off score for problematic alcohol use that was used in the current study (i.e., AUDIT scores of 8 or more), 27.5% of undergraduate women met criteria for hazardous or harmful drinking (Adlaf, Demers, & Gliksman. 2005). Furthermore, among undergraduates in British Columbia (both men and women) in the study by Adlaf and colleagues, 26.7% met criteria for hazardous or harmful drinking. In another study assessing undergraduates across Canada, however, 45.5% of women reported consuming 5 or more drinks the last time they socialized, and among women who reported drinking alcohol in the past year, 55% endorsed one or more problematic experiences related to alcohol consumption (e.g., memory loss, trouble with the police, physical injury, etc.; American College Health Association, 2013).

In terms of harmful drug use, the current sample obtained a mean score of 1.32 (*SD* = 1.38) for lifetime abuse. Scores between 1 and 2 fall within the low-level drug abuse problem range (Skinner, 1982). Our study's mean is similar to the mean of 1.64 (*SD* = 1.43) for drug abuse among undergraduate students (both men and women) in a U.S. study by McCabe and Teter (2007). Furthermore, 15.9% of participants in the current study scored in the problematic range for drug use (i.e., DAST-10 score of 3 or

above). This is considerably higher than a previous study by McCabe and colleagues (2006), which found that 7.8% of undergraduate women scored in the problematic range for drug use. In the current sample, marijuana was the most frequently used drug, with a total of 74.5% of participants who reported ever having used marijuana. Marijuana was also the most frequently used drug in the study by Adlaf and colleagues (2005), however, they found that 51.4% of undergraduates across Canada reported ever using marijuana. In the present study, 55% of participants reported using marijuana during the past year. This is also much higher than the prevalence in the Adlaf et al. study, which found that 30.1% of undergraduate women reported using marijuana in the past year. Results from our study showed that ecstasy use throughout the lifetime was reported by 25.5% of participants, compared to 8.3% of participants in the Adlaf et al. study. The use of hallucinogens throughout the lifetime was reported by 24.7% of participants in the current study, while in the study by Adlaf and colleagues, lifetime hallucinogen use was reported by 16.9% of participants. Lifetime cocaine use was reported by 14.8% of participants in the present sample, compared to 4.7% of participants in the Adlaf et al. study. Finally, rates of lifetime LSD use in the current study were similar to rates reported in the Adlaf et al. study (i.e., 6.6% versus 6.2%, respectively).

One possible reason that the current study's rates for both drug and alcohol abuse are higher than previous findings may be related to the non-metropolitan location of our study. More specifically, a study by Lambert, Gale, and Hartley (2008) reported that rates of drug and alcohol use were highest among young adults in non-metropolitan urban areas (i.e., populations between 20,000 and 250,000) compared to young adults from metropolitan areas and rural areas. The authors speculated that there might be fewer

alternatives for recreational activities or events in more isolated and less metropolitan areas, thus increasing the risk of substance use. In addition, youth (i.e., age 12-17 years) and young adults (i.e., age 18-25 years) have been found to be the age groups with the highest rates of substance use (Lambert et al.). This may apply to the current sample, as most of the women were younger than 25 years old.

The mean ECR scores for avoidant attachment in this study was 72.67 (*SD* = 9.08) and the mean for anxious attachment was 62.56 (*SD* = 19.76). The current study's scores for avoidant attachment are higher than the ECR scores reported in a study by Sandberg, Suess, and Heaton (2010), which found that undergraduate women had a mean of 50.40 (*SD* = 19.80) for avoidant attachment. Sandberg and colleagues reported a mean of 63.72 for anxious attachment (*SD* = 20.16), which was nearly identical to the current study. In a study that involved a sample of Canadian women (ages 18 to 35 years; *M* = 28, *SD* = 4.00) who were in a romantic relationship, the mean for avoidant attachment was 31.14 (SD = 16.92) and the mean for anxious attachment was 55.08 (*SD* = 22.14; Brassard, Lussier, & Shaver, 2009). Although it seems that in previous studies, the mean for anxious attachment is generally higher than the mean for avoidant attachment, the current study found the reverse. There did not seem to be any literature-based theory that might help explain this finding, but previous studies that have categorized individuals into secure, anxious, and avoidant styles of attachment have reported a greater proportion of people with avoidant attachment compared to those with anxious attachment (e.g., Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983; Hazan & Shaver, 1987; Weston, 2008). For instance, a study by Weston found that among a community sample of women (who had been in a long-term heterosexual relationship for one year or more),

32.8% identified themselves as having avoidant attachment patterns, while 10.8% reported having anxious attachment patterns. These proportions are comparable to the distribution found in the literature, such as a study by Feeney, Noller, and Patty (1993), in which 31.6% of late adolescents reported avoidant attachment styles compared to 15.5% who endorsed anxious attachment styles. In addition, Hazan and Shaver (1987) also found that more individuals classified themselves as having avoidant attachment compared to anxious attachment. Furthermore, the mean for avoidant attachment may have been higher than usual in the current sample, as certain features of avoidant attachment within the context of a romantic relationship may simply reflect undergraduate student's casual attitudes toward their romantic relationships, including a lack of emotional investment and valuing self-reliance as well as independence (Drouin & Landgraff, 2012; Parker, Johnson, & Ketring, 2012). Moreover, the majority of women in the sample were in relatively short-term relationships, and the average length of romantic relationships in the present sample was 2.34 years. In a meta-analysis study by Acevedo and Aron (2009), the average length for short-term relationships was less than 4 years, and long-term relationships generally lasted 10 years or longer. In the current sample, 77.5% were in relationships that were relatively short-term (i.e., less than 4 years in length).

In terms of relationship satisfaction, participants in this sample had a mean score of 13.24 (*SD* = 1.95) based on the DAS-4, in which higher scores indicate greater relationship satisfaction (Sabourin et al., 2005). This is relatively comparable to the study by Brassard and colleagues (2009), in which Canadian women in a romantic

relationship were found to have a mean DAS-4 score of 16.85 (SD = 3.06) for relationship satisfaction.

Sexual Victimization, Child Maltreatment, and Attachment Insecurity

Contrary to expectations, a history of CSA was not predictive of subsequent attachment insecurity. This finding differs from numerous other studies, which found that women with a history of CSA were significantly more likely to demonstrate more insecure attachment patterns than women without a history of CSA (e.g., Aspelmeier, Elliott, & Smith, 2007; Roche et al., 1999; Styron & Janoff-Bulman, 1997; Twaite & Rodriguez-Srednicki, 2004).

One possible explanation for the current study's results is that participants consisted only of women who were currently in a romantic relationship. Although the current sample did not have more secure attachment compared to other studies, perhaps being in a romantic relationship served as a protective factor in other areas besides attachment insecurity. According to Whiffen and Macintosh (2005), "among CSA survivors, the ability to form a stable, cohabiting relationship may indicate a relatively high level of functioning, which would truncate the statistical associations among the variables" (p. 28).

However, women who experienced more severe ASA and child psychological abuse reported greater attachment avoidance and attachment anxiety in their relationships. Although there exists less research assessing the relation between ASA and attachment (compared to research assessing the relation between CSA and attachment), a study by Elwood and Williams (2007) found that survivors of interpersonal violence (i.e., physical and sexual victimization in their romantic

relationships) reported significantly higher levels of attachment anxiety than non-survivors. Conversely, a significant relation was not found between attachment avoidance and interpersonal violence. These findings suggest that survivors are not more likely to avoid intimacy than non-survivors, although survivors may feel less secure and less trusting of their romantic partners when they are in a relationship. In addition, attachment anxiety (but not attachment avoidance) was also associated with experiencing unwanted sexual contact, verbal coercion, and attempted sexual assault in a sample of undergraduate students in a study by Szielasko, Symons, and Price (2013).

The current study's finding that women with a history of child psychological abuse reported greater attachment avoidance and attachment anxiety in their relationships is consistent with the findings from a study by Riggs and Kaminski (2010), in which child psychological maltreatment predicted insecure attachment (both anxious and avoidant) in a sample of undergraduate students. Indeed, Riggs and Kaminski suggest that this type of maltreatment may actually be one of the most harmful types of abuse in terms of its impact on insecure attachment. For example, while all types of child maltreatment have been associated with attachment insecurity, only psychological maltreatment was shown to increase risk beyond the harmful impact of other types of abuse (Riggs & Kaminski).

Sexual Victimization, Child Maltreatment, and Substance Abuse

Contrary to expectations, a history of CSA was not predictive of subsequent substance use problems (i.e., drug and alcohol abuse). This is inconsistent with previous research, in which a significant relation between a history of CSA and subsequent substance abuse among women has largely been found (e.g., Miller et al., 1987; White &

Widom, 2008). Comparable to our findings, however, CSA was not found to be a significant predictor of alcohol abuse in a study by Fleming et al. (1998), which investigated the relation between a history of CSA and alcohol use in women. Nevertheless, a history of CSA became significantly associated with alcohol abuse when combined with other factors, such as growing up with a mother who was perceived as cold, uncaring, emotionally unavailable, or rejecting; having an alcoholic significant other; and believing that alcohol is a sexual disinhibitor. One explanation that was hypothesized by the authors based on their findings was that perhaps only more severe CSA experiences are associated with subsequent harmful drinking, as opposed to simply whether or not any kind of CSA has been experienced at all. Although in the current study, CSA was measured using a continuous score, items ranged in severity from non-contact CSA to forced penetration. Perhaps if the current study had only included the most severe types of CSA (e.g., forced oral sex or intercourse), CSA may have been more likely to predict harmful alcohol and drug use.

Similarly, in a study by Jarvis, Copeland, and Walton (1998), a history of CSA was not found to predict the severity of substance abuse (i.e., drug and alcohol abuse) in a sample of women from substance use treatment centres. Furthermore, Mullen, Martin, Anderson, Romans, and Herbison (1993) did not find a relation between a history of CSA and alcohol use problems in a community sample of women. However, Mullen and colleagues did find a relation between CSA involving intercourse and alcohol use, which may provide further indication that more severe and intrusive cases of CSA are associated with increased alcohol use rather than experiencing any type of CSA. In the current study, the number of women with a history of CSA was too small to perform

analyses within the CSA group based on different aspects of the CSA experience (e.g., analyzing women who reported forced intercourse separately from those who reported forced exposure of sex organs or inappropriate touching). It might therefore be helpful in the future to examine this area using a larger sample of women with a history of CSA.

In addition, findings in the current study that women who reported more severe child psychological abuse engaged in more drug and alcohol abuse are consistent with the results from a study by Rosenkranz, Muller, and Henderson (2012) examining the impact of different types of child maltreatment on subsequent substance use problems. Assessing a sample of youth who were in an outpatient treatment program for substance use concerns, Rosenkranz and colleagues found that only psychological maltreatment was predictive of substance use problem severity - particularly among young women. One of the explanations discussed by Rosenkranz and colleagues is that psychological maltreatment may be the main underlying source of harm in most types of childhood maltreatment.

As predicted in the current study, women who experienced more severe ASA engaged in greater levels of drug and alcohol abuse. These findings are consistent with previous research, in which substance abuse problems (i.e., drug and alcohol abuse) have been found to be associated with sexual victimization in adults (Burnam et al., 1988; Kilpatrick et al., 1997; Messman-Moore & Long, 2002). According to Kilpatrick et al. (2000), women who have experienced sexual victimization may engage in substance use to alleviate mental health problems and reduce unpleasant feelings and memories associated with the victimization experience. Since substances are only temporarily

effective in reducing negative affect, substance use may increase in order to maintain the numbing effect.

Sexual Victimization and Relationship Satisfaction

Contrary to predictions, sexual victimization (i.e., both CSA and ASA) did not predict lower relationship satisfaction above and beyond other types of child maltreatment. DiLillo, Peugh, Walsh, Panuzio, Trask, and Evans (2009) assessed the impact of different types of child maltreatment on marital satisfaction among newlyweds and reported similar results. Despite the focus of prior work in this area on the pervasive impact of sexual abuse on romantic relationships, DiLillo and colleagues also found that CSA did not predict marital satisfaction (however neglect did predict marital satisfaction among women). They suggested that the association between CSA and marital satisfaction may have been weaker because they eliminated any divorced couples from the study, who also happened to have a high rate of sexual abuse histories. The prevalence and severity of CSA in their sample was consequently relatively low. In particular, there were few participants with a history of CSA that involved forced intercourse, which has been found to have a strong association with marital problems (Whisman, 2006). In the current study's sample, there were also relatively few participants with a history of CSA involving forced intercourse. Furthermore, DiLillo and colleagues pointed out that while previous studies in this area have included couples who had been married for much longer (e.g., Whisman, 2006), by examining newlyweds, there may not have been enough time for potential marital difficulties stemming from CSA experiences to arise. This might be comparable to the present sample, which

consisted of undergraduate women who were currently in a relationship (e.g., 77.5% were in relatively short-term relationships and most were not married).

Substance Abuse and Relationship Satisfaction

Past studies have found varying results for men versus women in terms of the association between substance use and relationship satisfaction. For example, Horrowitz and White reported that increased alcohol use was associated with greater marital conflict among men but not for women. In the Newcomb (1994) study, drug use among women predicted decreased relationship satisfaction over time, and alcohol use predicted lower sexual satisfaction. For men, alcohol and drug use were associated with decreased relationship satisfaction and increased relationship conflicts. McCrady and Raytek (1993) reported that married women with alcohol abuse problems experienced greater marital difficulties, received less emotional support from their spouses, and were more likely to get divorced compared to married men with alcohol abuse problems. In a cross-sectional study assessing men and women from 15 different countries, being in a stable marriage (compared to never being married) was associated with fewer substance use problems among women but not men (Scott et al., 2010). Furthermore, being previously married (i.e., separated, divorced, widowed or remarried) was associated with greater substance use problems among women compared to men. Taken together, all these findings suggest that the association between substance use (i.e., drug and alcohol use) and relationship satisfaction may differ for each gender.

Although previous research has found that drug and alcohol abuse problems are associated with romantic relationship problems and dysfunction (e.g., Fals-Stewart, Birchler, & O'Farrell, 1999; Sotskova, Coghlan, & Woodin, 2011), the current study

found that greater substance abuse (both drug and alcohol abuse) did not predict lower relationship satisfaction. One possible explanation is that previous findings indicate that the association between romantic relationships and substance use also depends on partner substance use (as well as the quality of the relationship; Rhule-Louie & McMahon, 2007). As proposed by Rhule-Louie and McMahon, individuals tend to choose partners who are similar, or who engage in similar behaviours. The current study, however, only examined individuals who reported being in a relationship instead of both members of a couple. In addition, a longitudinal study by Fleming, White, and Catalano (2010) assessed the association of substance use (i.e., drug and alcohol use) with romantic relationship status (i.e., married, cohabiting, dating, and single) and relationship quality in a large community sample, and although they did not find any overall effect for relationship quality on substance use, they did find a moderating effect showing that greater relationship quality protected against heavy substance use (i.e., alcohol and marijuana), when the partner engaged in little or no substance use. Thus in the future, it might be more informative to assess both members of each couple in order to account for partner substance abuse. Furthermore, Fleming and colleagues found that among the different types of relationship statuses, marriage had the strongest negative association with substance use, indicating that marriage showed the strongest protective effect for heavy drinking (compared to dating relationships) and that marriage was associated with significantly lower substance abuse (i.e., drug and alcohol abuse) than dating relationships. Since Fleming and colleagues found that those who were married (which is generally an indication of being in a long-term, stable, and committed relationship) had the lowest substance use compared to other relationship statuses, perhaps examining only

people who were currently in serious long-term relationships or who were married would have also increased the likelihood of finding a significant association between lower substance abuse and greater relationship satisfaction in the current study.

The Moderating Role of Attachment

Support was found for anxious attachment as a moderator in the relation between CSA and drug abuse, however avoidant attachment was not found to be a moderator in the relation between CSA and drug abuse. Although relatively few studies have examined attachment as a moderator between CSA and various potentially negative outcomes (Aspelmeier et al., 2007), according to Alexander (1992), CSA survivors with insecure attachment may be more likely to turn to drugs and alcohol in order to reduce anxiety levels. In a study by Riggs, Sahl, Greenwald, Atkison, Paulson, and Ross (2007), anxious attachment (and not avoidant attachment) predicted drug and alcohol abuse problems in a sample of adult (mostly female) patients in a trauma treatment program (over 91% of whom reported a history of CSA). Riggs and colleagues proposed that because women have been found to use psychoactive substances to reduce levels of distress or to increase self-confidence (Boys, Marsden, & Strang, 2001; Lillehoj, Trudeau, Spoth, & Wickrama, 2004), and the sample they assessed was mostly female, anxious attachment may be more likely than avoidant attachment to contribute to problems with drugs and other substances among women. Although the Riggs study used a very specific sample, the authors' theory may still help explain the current study's findings.

Insecure attachment (i.e., anxious and avoidant) did not moderate the relation between CSA and alcohol abuse in the current study. Although they did not assess sexual

victimization, a study by Reis, Curtis, and Reid (2012) similarly found that insecure attachment and alcohol use were not associated among women. However, Reis and colleagues did find an association between insecure attachment and alcohol use among men. According to Reis and colleagues, this emphasizes the need for further research exploring gender differences in the relations between attachment and alcohol use. In addition, perhaps our finding that attachment did not moderate the relation between CSA and alcohol abuse can also be explained by the theories suggested in the Fleming et al. study (1998) and the Mullen et al. study (1993), in which more severe and intrusive CSA experiences may be more likely to be associated with increased alcohol abuse, rather than experiencing any type of CSA (as previously discussed).

Sexual Victimization, Child Maltreatment, Substance Abuse, and Attachment Insecurity

Although attachment insecurity (i.e., both anxious attachment and avoidant attachment) did not moderate the relation between ASA and substance abuse (i.e., drug and alcohol use), women who experienced more severe ASA and child psychological abuse reported greater attachment avoidance and attachment anxiety in their relationships. This finding is consistent with previous research, which has found a relation between sexual victimization and insecure attachment patterns (e.g., Roche et al., 1999; Styron & Janoff-Bulman, 1997). In addition, a study by Gentzler and Kerns (2004) found that both avoidant and anxious attachment were associated with engaging in more unwanted (but still consensual) sexual experiences among women (e.g., participants were asked if they had ever engaged in sexual intercourse with someone because they did not wish to upset him/her, or because they felt pressured, even though it was unwanted).

Moreover, according to Lilly and Lim (2013), exposure to interpersonal trauma (whether it occurred in childhood or adulthood) is associated with increased risk for insecure attachment, and among their community sample of interpersonal violence survivors, they found high scores of attachment insecurity. The current study's finding that women with a history of child psychological abuse reported greater attachment insecurity in their relationships is consistent with the results from the Riggs and Kaminski (2010) mentioned earlier, in which child psychological maltreatment predicted insecure attachment. Moreover, this type of abuse may actually be one of the most harmful types of maltreatment in terms of its impact on attachment insecurity.

Although there do not appear to be any studies that have examined attachment insecurity (i.e., both anxious attachment and avoidant attachment) as a moderator in the relation between ASA and substance abuse (i.e., drug and alcohol abuse), the findings in the current study indicated that women who experienced either more severe ASA or more severe child psychological maltreatment engaged in greater levels of alcohol abuse (as discussed earlier). Additionally, those who experienced more severe CPA engaged in lower levels of alcohol abuse. This result is surprising, given the relatively consistent previous finding that a history of CPA is associated with an increased likelihood of alcohol use problems (e.g., MacMillan et al., 2001; Thompson, Arias, Basile, & Desai, 2002). Perhaps one way to explain the present study's finding is that the mean value of CPA (M = 0.85; SD = 1.95) was relatively low compared to the range of possible values (range = 0-13). It is therefore possible that although greater CPA was associated with less alcohol abuse, the overall severity of the CPA experienced in this sample remained quite low. As suggested by Lown, Nayak Korcha, and Greenfield (2011), another

possible explanation is that CPA by parents may also signify parental discipline, and when severity is low or moderate, it may be more culturally acceptable (particularly compared to non-parental CPA). Since alcohol consumption may increase when it is used as a way to cope with upsetting experiences or to relieve painful memories (Fergusson, Boden, & Horwood, 2009; Simpson, 2003; Ullman, Filipas, Townsend, & Starzynski, 2005), perhaps the parental CPA experienced by the current sample was not severe enough (relatively speaking) to be associated with increased problematic drinking. Indeed, perhaps the relationship between CPA and alcohol abuse in the present study was the opposite to what was expected since the low level of CPA may have been more comparable to parental discipline, which has generally been associated with decreased alcohol use (Marshal & Chassin, 2000; Ryan, Jorm, & Lubman, 2010).

Furthermore, women who were younger and whose parents had higher incomes engaged in greater alcohol abuse. Increased alcohol use was also found to be associated with living in a high SES neighbourhood (compared to low SES neighbourhoods) in a random community sample (Chuang, Ennett, Bauman, & Foshee, 2005). In addition, higher SES was associated with greater alcohol use among adults in a longitudinal study by Moore, Gould, Reuben, Greendale, Carter, Zhou, and Karlamangla (2005). One explanation for this finding is that alcohol was found to be more available in high SES homes compared to low SES homes (Spijkerman, van den Eijnden, & Huiberts, 2008). According to Spijkerman and colleagues, however, further research is needed to establish whether these differences in alcohol availability are based on economic or social norm differences between high and low SES families.

Sexual Victimization, Relationship Satisfaction, and Attachment Insecurity

Despite the present study's finding that attachment insecurity (both anxious and avoidant) did not moderate the association between sexual victimization (both CSA and ASA) and relationship satisfaction, findings did show that women with greater levels of anxious attachment reported lower levels of relationship satisfaction. This is consistent with previous research suggesting that individuals with insecure attachment patterns are less satisfied with their romantic relationships than those with secure attachment (Hazan & Shaver, 1987). According to Drouin and Landgraff (2012), individuals with anxious attachment show an intense need for closeness in their romantic relationships, along with a strong fear of being abandoned by their partner. They may also question their partners' love for them, and when their need for closeness is not met, they may use strategies to maintain proximity and to keep their partner interested (Frouin & Landgraff, 2012; Hazan & Shaver, 1987). They are also likely to feel high levels of distress and to worry or ruminate about their partner leaving them. Individuals who have high levels of anxious attachment may become obsessed with their partner and develop clinging and controlling behaviour patterns, which in turn may increase relationship conflict and decrease relationship satisfaction and quality (Birnbaum, 2007; Hazan & Shaver, 1987; Shaver & Mikulincer, 2006). According to Birnbaum, as individuals' attachment anxiety increases, so does the view that their partner is uncaring and unresponsive to their needs. With greater attachment anxiety, they are also more likely to have negative feelings (e.g., shame and guilt) and to be distracted by their relational problems. These problems may in turn have a negative impact on sexual satisfaction, which can lead to further feelings of frustration and alienation between them and their partner.

One reason for the lack of significant finding regarding the moderating role of attachment in the association between sexual victimization and relationship satisfaction might be that the entire sample consisted of undergraduate students who reported currently being in romantic relationship. According to DiLillo and colleagues (2007), the relationships of university students are frequently transitory in nature and they might not experience the types of relationship problems that characterize longer lasting relationships. These types of problems that may stem from abusive experiences and that can arise over time include adverse or dysfunctional attitudes toward sexual activity (e.g., feeling angry about a sexual overture or pretending to experience sexual pleasure), increased conflict or aggression, and problems related to fear of intimacy. Importantly, Davis, Petretic-Jackson, and Ting (2001) suggest that viewing one's relationship as highly satisfying may override or improve attachment insecurity related to a history of abuse. This could imply that relationship satisfaction may instead be a moderator of the relation between sexual victimization and attachment.

Limitations and Future Directions

This study had several limitations, which may partially explain why the results were not all as predicted, and why the rates of drug abuse, alcohol abuse, ASA, and attachment insecurity were different from previous findings. First, the sample consisted only of women undergraduate students at a medium sized Canadian university. Results therefore do not generalize to community or clinical samples, nor are they applicable to undergraduate men (Sandberg, 2010). Furthermore, because there may be qualitatively different factors associated with sexual victimization experiences in men (e.g., amount of physical force used, injury severity, emotional impact of the experience), results cannot

be generalized across genders (DiLillo et al., 2007; Johnson & Bunge, 2001; Struckman-Johnson, 1988; Struckman-Johnson & Struckman-Johnson, 1994). Future studies are needed in this area in order to explore gender differences. The sample was also largely Caucasian and heterosexual, and even though differences between ethnicities and sexual orientation were assessed for each of the key variables, future research should still include more racially and sexually diverse samples in order to be more representative of the general population (Gentzler, & Kerns, 2004). For instance, ethnic, racial, and sexual orientation differences have been found in rates and severity of sexual victimization experiences, as well as in coping strategies following the victimization (Hughes, Haas & Avery, 1997; Ullman & Filipas, 2005). There have also been differences found in attachment styles among individuals of different ethnicities, races, and sexual orientations (Domingue & Mollen, 2009; Lopez, Melendez, & Rice, 2000). Furthermore, the relationship between stressful or traumatic events and substance use problems (i.e., drug and alcohol use) has been found to vary by race as well (Broman, 2005). Rates of substance use problems have also been found to differ between individuals with different sexual orientations (Hughes & Eliason, 2002).

Another limitation is that all participants in this study were in a relationship. We were therefore unable to assess whether there was a link between experiencing sexual victimization and never having been in a relationship. In future, it would be useful to include women who are not in a relationship and compare the two groups (although we would of course not be able to assess current relationship satisfaction in those who are single). Conversely, although this study examined women in a relationship, we did not examine both members of each couple. In order to better evaluate dyadic functioning, as

well as to account for the impact of partner substance abuse on relationship satisfaction, it would be helpful to assess both partners (DiLillo et al., 2009). Furthermore, since being married has been found to be the strongest protective factor for heavy drinking (compared to other less committed relationship statuses) and has been associated with significantly lower substance abuse than dating relationships (as described earlier), it might be important to include only individuals who are currently in serious long-term relationships or who are married in order to increase our understanding of relationship satisfaction in committed couples (Fleming et al., 2010).

The sample size in this study was also relatively small ($N = 271$), and while 50 women met the criteria for experiencing CSA, only 31 experienced contact CSA, which may have decreased the likelihood of finding significant associations among the variables. Moreover, the number of women with a history of CSA was too small to do analyses within the CSA group based on different aspects of the CSA experience (e.g., analyzing women who reported forced intercourse separately from those who reported forced exposure of sex organs or inappropriate touching). For example, significant findings may have been more likely had we only examined CSA involving forced intercourse. It might therefore be helpful in the future to use a larger sample of women with a history of CSA, and to include members of the general community or to assess clinical samples as well.

In terms of the high rates of problematic drug and alcohol use in this study, it is possible that some of the original participants who were deleted due to missing data on all items of the substance abuse measures (i.e., DAST-10 or AUDIT) had never used any drugs or did not drink alcohol and misunderstood the instructions on these measures, and

thus did not answer any of the items. By deleting the participants with no drug or alcohol use, we may have found higher rates of harmful substance use that are not truly representative.

In the present study, we also statistically controlled for the effect of other types of child maltreatment, which allows us to examine the unique relation of sexual victimization to each of the outcome variables (Field, 2009). However, controlling for other types of maltreatment may change the relation between sexual victimization and the outcome variable (e.g., the relation may be strengthened or weakened), particularly when sexual victimization is highly correlated with the other abuse variables (i.e., collinearity). If there is too much collinearity, the estimated effects of sexual victimization may not be accurate. The proportion of the variability in the outcome variable may have been impacted as well.

Also, responses may have been subject to recall bias or distortion, due to the retrospective self-report nature of the questionnaires (e.g., recollections of the participants' child abuse-related experiences; Sandberg, 2010). Even though previous research indicates that recall of abusive events in adulthood is generally accurate, it may be useful in future studies to include multiple methods of assessing abusive experiences (e.g., documented cases of child maltreatment and interview-rated assessments; Brewin, Andrews, & Gotlib, 1993; Gibb, Chelminski, & Zimmerman, 2007). Findings may also have suffered due to the potential under-reporting of problematic drinking or sexual victimization by the respondents. Furthermore, because of the cross-sectional design, no causal inferences or directionality of the effects could be made from these findings (Sandberg, 2010). For example, we cannot be certain whether or not ASA experiences

precede substance abuse (or vice versa). Additional longitudinal research is needed to examine how the relation between sexual victimization, attachment, substance abuse, and relationship satisfaction changes over time.

Despite these limitations, this study still provides important information regarding the associations between sexual victimization, harmful substance use, attachment insecurity, and relationship satisfaction. Importantly, we found that women who experienced both more severe CSA and anxious attachment engaged in greater levels of drug abuse (i.e., anxious attachment moderated the relation between CSA and drug abuse). Furthermore, women who experienced more severe ASA and child psychological abuse reported greater attachment avoidance and attachment anxiety in their relationships and engaged in greater levels of drug and alcohol abuse. This implies that mental health care professionals working with women survivors of sexual victimization should be aware of potential attachment-related difficulties, as well as an increased risk of developing substance use problems that may be stemming from victimization experiences. More specifically, the presence of attachment insecurity may increase the likelihood of engaging in problematic substance use for university women with a history of sexual victimization, who may be using substances as a means of coping with feelings of distress related to their abuse. This suggests avenues for prevention as well as intervention for substance use among university women. University counselling centres may opt to direct their treatment of drug-related issues towards reducing attachment insecurity symptoms and should be alert to the possible need for abuse-focused counselling as each may have a role in treating substance-related issues in college women. Further examination of the effects of these variables is important, as this will be

beneficial in terms of designing effective treatments based on individual needs (e.g., cognitive behavioural therapy, cognitive processing therapy, mindfulness-based therapies, contingency management treatment for substance use problems). Overall, research exploring these associations will contribute to a better understanding of the factors that influence those who have experienced sexual victimization. By identifying and understanding the contributing and moderating factors underlying the association between sexual victimization and subsequent psychological adjustment (e.g., attachment insecurity, substance use problems, and lower relationship satisfaction), we can use these findings to design effective early intervention programs for individuals at-risk of substance abuse, attachment insecurity, relationship problems, and even abuse-related post-traumatic stress symptoms. Promoting the development of constructive coping strategies, and preventing the development of substance abuse problems, would help to reduce the degree of risk and to avoid additional problems and psychopathology associated with sexual victimization later in life. More specifically, the development of secure attachment patterns in adult romantic relationships may be helpful in decreasing dependence on substance use as a way of coping with earlier victimization experiences and increasing relationship satisfaction. Ultimately, the aim of this research is to provide information that will help improve the health and well-being of sexual victimization survivors in general, and in particular, those who struggle with substance abuse.

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Appendix A: Online Consent Form

Life Experiences, Health and Relationships Study

Introduction: You are invited to participate in a study entitled Life Experiences, Health and Relationships, which is being conducted by Dr. Marsha Runtz (Associate Professor in the Department of Psychology) and Erin Eadie (Ph.D. student in Psychology). You may contact **Ms. Eadie** at 250-472-4177 or eeadie@uvic.ca if you have any questions about this research. You may also contact **Dr. Marsha Runtz**, the principal investigator, at **250-721-7546** or runtz@uvic.ca.

Purpose & Importance of the Study: The purpose of this research is to explore within the general population, different aspects of well-being and to examine the links between various life experiences, relationships across the life span, and health outcomes. This study is important because there is a lack of research in this area and because the findings will provide important information about factors which might influence the development of psychological and physical well-being. Understanding how life experiences might affect one's relationships and health will also provide important information to guide the development of counselling and therapy services for people with similar experiences.

Voluntary Participation: Your participation in this research must be completely voluntary. **You may withdraw from the study at any time** and you may refuse to answer any question(s) without having to explain your reasons for doing so and without consequences. You will still receive your Psychology course bonus points for this study whether you complete the questionnaire or if you submit a blank or incomplete questionnaire. Whether or not you participate in this study will have no effect on your grades or academic standing (aside from attaining bonus points) and your instructor will not have access to any of the information collected in this study. If you change your mind about having your responses used in this research, please indicate this by not submitting the online questionnaire and by closing the website. HOWEVER, AFTER SUBMITTING YOUR DATA ONLINE IT WILL BE LOGISTICALLY IMPOSSIBLE TO WITHDRAW (OR TO REMOVE YOUR DATA).

Anonymity: All of the responses that you give in this study are completely anonymous and confidential; your name will not be linked to your responses in any way. Your answers will be kept in an anonymous data bank without the possibility of identifying you. All of the information collected will be used for group-based analyses; that is, questionnaires will not be analyzed individually but will be pooled together with a large number of responses from other participants. Please do not write in or submit your name in any place on the questionnaire and please do not provide the names of any other individuals that may have been involved in any of the events you disclose in this questionnaire. We are limiting participation in this study to individuals who are 19 years of age or older. **If, however, we receive identifying information that leads us to believe that you or any individual who is under 19 years of age is at risk of harm, we would be obliged to inform the proper authorities.** If, you would like to report an

incident of child maltreatment yourself or if you have concerns about a child at risk of maltreatment, please see the list of numbers at the bottom of this form.

Confidentiality: The confidentiality of your data will be further protected by keeping your responses and all data files and other research records secure (e.g., in password protected files and computers in locked offices). Only the researcher and research assistants will have access to the data. YOUR NAME AND STUDENT NUMBER ARE NOT ASSOCIATED WITH THE ELECTRONIC DATA. This information will be retained only within the Psychology Department for the purpose of assigning bonus points and will be discarded once the bonus points have been assigned. Computerized anonymous data will be kept for at least 10 years beyond the date of the last publication of the findings from this study.

Sensitive Topics: If you decide to participate in this study, you will be asked to complete an online questionnaire that inquires about a range of psychological and social issues including some personal or sensitive topics such as difficult life experiences (which may include experiences of childhood maltreatment and other forms of victimization across the lifespan), social relationships, psychological well-being, general demographic information, as well as physical and sexual health.

Eligibility: You are eligible to participate in this study if you are a UVic undergraduate student and if you are 19 years of age or older.

Inconvenience & Risks: Participation in this study may cause some inconveniences to you, including the time it will take to complete the questionnaire (approximately 1 hour). A potential risk of participating in this research is that some people may feel some emotional discomfort as a result of answering questions of a sensitive nature (e.g., about sexual health or difficult life experiences). To deal with these risks, we want you to know that you do not have to answer any questions that make you feel uncomfortable, that you can withdraw your participation at any time, and that you can talk to the researcher (Dr. Runtz), the co-investigator (Ms. Eadie), or any of the research assistants involved about any concerns that might have arisen as a result of participating in this research. In addition, phone numbers for university and community resources will be provided at the end of this letter, should these services be of need to you.

Benefits: In addition to the bonus points that you receive in your psychology course, the potential benefits of your participation include 1) experiencing psychological research methods first hand, 2) helping us, the researchers, to assess the psychometric qualities of a questionnaire evaluating psychological health and relationships, and 3) helping us to understand how life experiences might affect people's health and adjustment as adults.

Compensation: To compensate you for your participation, you will receive bonus points towards your course grade in a psychology course at the University of Victoria. It is important for you to know that it is unethical to provide undue compensation to research participants, and if you agree to participate in this study, this form of compensation

should not be coercive. If you would not participate if the compensation were not offered, then you should decline participation at this time.

Results from the Study: After you complete the study, you will receive a debriefing form that outlines the basic purpose of the research in more detail. If you would like a summary of the findings after the study is completed, you can contact Dr. Runtz directly or check her website (at http://web.uvic.ca/~runtzweb/) for summaries of papers prepared from this project. It is anticipated that the results of this study will be shared with others in the following ways: in presentations to other graduate students and faculty, in conference presentations, on the website, and in published peer-reviewed articles.

Ethical Approval: In addition to being able to contact the researchers, you may verify the ethical approval of this study, or raise any concerns you might have by contacting the Associate Vice President, Research at the University of Victoria at (250) 472-4545 or ethics@uvic.ca.

THANK YOU FOR YOUR INTEREST AND PARTICIPATION IN THIS STUDY.

If any of the questions in this study made you uncomfortable in any way, or if participating in this study brought up any issues that are distressing for you, some resources that might be of assistance are provided below:

- University of Victoria Counselling Services (on campus), 250-721-8341, http://www.coun.uvic.ca/
- NEED Crisis and Information Line (community agency), 250-386-6323, 1-888-494-3888, http://www.needcrisis.bc.ca/
- Help Line for Children, 250-310-1234, www.gov.bc.ca/mcf/ (information on reporting child maltreatment)
- British Columbia Psychological Association (BCPA) Referral Service, 1-800-730-0522, http://www.psychologists.bc.ca/referral.html
- Women's Sexual Assault Centre: 250-383-3232, http://www.vwsac.com/
- Island Sexual Health Society: 250-592-3479, http://islandsexualhealth.org/
- University of Victoria Health Services: 250-721-8492, http://health.uvic.ca/

Appendix B: Online Debriefing Form

Thank you! You are almost finished.

As one final step, please scroll to the bottom of this page and click SUBMIT before closing your web browser.

Thank you for your interest and your participation in this study. Your responses are greatly appreciated especially because we realize that many of these questions were personal and perhaps not easy to answer. Please be assured that your responses will remain anonymous and confidential.

Purpose of the Study

As mentioned in the informed consent letter that you accepted, one of the main purposes of this research project is to assess the psychometric qualities of a questionnaire measuring relationships and psychological health. Specifically, this questionnaire assesses attachment patterns and associated beliefs and experiences. The study you have just participated in will allow us to have a better idea about the utility of this questionnaire to assess relationship problems in other individuals within the general population. Also, this study examines the consequences of life experiences in childhood, adolescence, and early adulthood. In particular, we are interested in how individuals cope with specific challenging experiences (that may include, but are not limited to, childhood maltreatment experiences) and what effects these coping patterns might have on their physical and psychological health. There is some evidence to suggest that individuals who have difficult life experiences (such as physical or sexual maltreatment) may cope with these experiences, in part, by engaging in behaviours that could negatively impact their physical and/or psychological well-being. Results from studies such as this one will be of benefit to psychologists and others in health care professions who assist those with difficult life experiences to cope in more adaptive and healthier ways, thereby potentially preventing long-term consequences of unhealthy coping.

We appreciate your participation in this study, and hope that it has been a valuable and informative experience for you.

If you have any questions about this study, please contact Ms. Erin Eadie (250-472-4177 or eeadie@uvic.ca or Dr. Marsha Runtz (250-721-7546 or runtz@uvic.ca). We will be happy to respond to any questions that you may have about this research. You may also contact the Associate Vice-President Research at the University of Victoria (250-472-4545 or ethics@uvic.ca) if you have any questions or concerns about this study.

PLEASE CLICK SUBMIT TO FINALIZE YOUR PARTICIPATION IN THIS STUDY

Do not close this browser without clicking submit unless you have changed your mind and no longer want to submit your responses.

THANK YOU!

Appendix C: Demographic Information

1. Where did you see the announcement for this study?
On the UVic Psychology 100 Research Participation System (online sign-up)
On the UVic Psychology Department Research bulletin board
On the Social Psychology Network website
On the American Psychological Society website
On Facebook
On another website posting
Via email distribution
On a public poster
Other

2. What is your gender?
Female
Male
Other
No answer

3. How old were you on your last birthday? _____

4. Which of the below best describes your ethnic background? (Check all that apply and provide specifics where indicated).
Asian, Southeast Asian, South Asian
Black/African American/African Canadian
Caucasian/White/European Canadian/European American
First Nations/Aboriginal/Native Canadian/Native American
Hispanic/Latino
Mixed (Specify):
Other (Specify):

5. What is your country of origin? _____

6. What is your primary language (i.e. the language that you use the most or with which you feel the most comfortable)?
English
French
Spanish
Other

7. What is the highest level of education you have completed?
Some primary school (kindergarten to grade 7, but no secondary school)
Some secondary school (high school, grades 8 to 12)
Completed secondary school (or high school equivalent)
Technical school or trade diploma
College/university: some undergraduate courses completed
College/university: completed undergraduate degree (e.g., B.A.)
College/university: completed a master degree (M.A., M.Sc.)
College/university: completed a doctoral degree (Ph.D.)
College/university: other professional degree (e.g., M.D., LLB)

8. What is the highest level of education obtained by your parents or a parental figure? If applicable, choose the parent with the highest level of education.
Some primary school (kindergarten to grade 7, but no secondary school)
Some secondary school (high school, grades 8 to 12)
Completed secondary school (or high school equivalent)
Technical school or trade diploma
College/university: some undergraduate courses completed
College/university: completed undergraduate degree (e.g., B.A.)
College/university: completed a master degree (M.A., M.Sc.)
College/university: completed a doctoral degree (Ph.D.)
College/university: other professional degree (e.g., M.D., LLB)

9a. What is your personal income before you pay taxes?
Less than $10,000
$10 000-$19 999
$20 000-$29 999
$30 000-$39 999
$40 000-$49 999
$50 000-$59 999
$60 000-$69 999
$70 000-$79 999
$80 000-$89 999
$90 000-$99 999
$100 000 or more
No answer

9b. Do other people rely on your income (e.g., your partner or children)?

Yes No No answer

9c. Please indicate who relies on your income.
Partner
Child(ren)
Parent(s)
Other:

9d. What is your combined income including your partner and any depends who bring income into the household, before any of you pay taxes?
Less than $10,000
$10 000-$19 999
$20 000-$29 999
$30 000-$39 999
$40 000-$49 999
$50 000-$59 999
$60 000-$69 999
$70 000-$79 999
$80 000-$89 999
$90 000-$99 999
$100 000 or more
No answer

10. If you were living with your family when you were 17, how much did your family members (combined) make at that time, before taxes?
Less than $10,000
$10 000-$19 999
$20 000-$29 999
$30 000-$39 999
$40 000-$49 999
$50 000-$59 999
$60 000-$69 999
$70 000-$79 999
$80 000-$89 999
$90 000-$99 999
$100 000 or more
Not applicable

11. Are you currently in a romantic relationship?

Yes No No answer

12. What is your current relationship status?
Single, never married
Living with partner (common-law)
Married
Separated
Divorced
Widowed
Other

13. What is your sexual orientation?
Heterosexual
Bisexual
Lesbian or Gay
Other

14a. What is your current country of residence?
Canada
United States of America
Other

14b. In what Province or State are you currently living? _____

15a. Are you currently a college or university student?

Yes No No answer

15b. What academic year are you in?
First year undergraduate (Freshman)
Second year undergraduate (Sophomore)
Third year undergraduate (Junior)
Forth year undergraduate (Senior)
Fifth + year undergraduate
Graduate student
Other

15c. What is your academic major?
Psychology
Undeclared
Not applicable
Other

Appendix D: Childhood Sexual Abuse

We know that many people have unwanted "sexual" experiences during childhood. Some of these are with playmates or friends and some are with relatives or acquaintances. These experiences may be so upsetting that they may not be discussed with anyone. Sometimes they are forgotten for long periods of time, and sometimes they are frequently brought to mind.

We would like you to help us understand these types of experiences. Please try to remember whether any of the following occurred to you prior to the age of 14:

1. Has anyone ever exposed the sex organs of their body to you when you did not want this? *

Yes No No answer

2. Has anyone ever threatened to have sex with you when you did not want this?

3. Has anyone ever touched the sex organs of your body when you did not want this?

4. Has anyone ever made you touch the sex organs of their body when you did not want this?

5. Has anyone ever forced you to have oral sex when you did not want this?

6. Has anyone ever forced you to have intercourse (anal or vaginal) when you did not want this?

7. Have you had any other unwanted sexual experiences not mentioned above?

7b. Please specify: _____

8a. If you answered yes to more than one of the above, did these experiences happen with the same person or more than one other person?

__ All with the same person
__ With more than one person
__ Only had one experience

8b. How many other individuals were involved in these experiences? _____

*The response grid would normally be displayed after every item; here, it is shown only after the first item for the sake of brevity. The same format will be followed for the other measures listed in the appendices, as appropriate.

If more than one person was involved, please answer the following set of questions separately for each person. Begin with the experience that was most significant for you and answer these questions for the person (Person 1) involved in that experience.*

9. What was the other person's gender?
__ Female
__ Male

10. What was the other person's age at the time of the incident? _____

11. What was your relationship to the other person?
__ parent, stepparent, or guardian
__ sibling
__ grandparent
__ cousin
__ uncle or aunt
__ other adult relative
__ boyfriend or girlfriend
__ known person older than me but not an adult (e.g., babysitter, older acquaintance)
__ adult authority figure (e.g., teacher, minister, coach)
__ other known adult (not family)
__ stranger

12. Was physical force ever used?

Yes No No answer

13. Approximately how many times did this type of incident happen with this person?
_____

14. How old were you the first time it happened? _____

15. How old were you the last time it happened? _____

16. What was the nature of the unwanted experience(s) that occurred with this person?
__ exposed *their* sex organs
__ threatened to have sex with you
__ touched *your s*ex organs
__ made you touch t*heir* sex organs
__ forced you to have oral sex
__ forced you to have intercourse (anal or vaginal)
__ other
__ no answer

*Items 9 through 16 will be answered repeatedly for each individual that the participant identifies.

Appendix E: Sexual Experiences Survey (SES)

The following questions concern sexual experiences that you may have had that were unwanted. Your information is completely confidential and anonymous. We hope that this helps you to feel comfortable answering each question honestly. Please indicate the number of times each experience has happened to you. If several experiences occurred on the same occasion, for example, if one night someone told you lies and had sex with you when you were drunk, you would check both boxes a and c. The past 12 months refers to the past year going back from today. Since age 14 refers to your life starting on your 14th birthday and stopping one year ago today.

		How many times in the past 12 months?	How many times since age 14?
1.	Someone fondled, kissed, or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent *(but did not attempt sexual penetration)* by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d. Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

2.	Someone had oral sex with me or made me have oral sex with them without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d. Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

		How many times in the past 12 months?	How many times since age 14?
3.	If you are a male, check box and skip to item 4 ☐ A man put his penis into my vagina, or someone inserted fingers or objects without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐☐☐☐	☐☐☐☐
	d. Threatening to physically harm me or someone close to me.	☐☐☐☐	☐☐☐☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐☐☐☐	☐☐☐☐

4.	A man put his penis into my butt, or someone inserted fingers or objects without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐☐☐☐	☐☐☐☐
	d. Threatening to physically harm me or someone close to me.	☐☐☐☐	☐☐☐☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐☐☐☐	☐☐☐☐

5.	Even though it didn't happen, someone TRIED to have oral sex with me, or make me have oral sex with them without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐☐☐☐	☐☐☐☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐☐☐☐	☐☐☐☐
	d. Threatening to physically harm me or someone close to me.	☐☐☐☐	☐☐☐☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐☐☐☐	☐☐☐☐

		How many times in the past 12 months?	How many times since age 14?
6.	If you are male, check this box and skip to item 7. ☐ Even though it didn't happen, a man TRIED to put his penis into my vagina, or someone tried to stick in fingers or objects without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d. Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

7.	Even though it didn't happen, a man TRIED to put his penis into my butt, or someone tried to stick in objects or fingers without my consent by:	0 1 2 3+	0 1 2 3+
	a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c. Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d. Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

8. Did any of the experiences described in this survey happen to you 1 or more times? Yes ☐ No ☐

9. What was the sex of the person or persons who did them to you?

- Male only ☐
- Female only ☐
- Both females and males ☐
- I reported no experiences ☐

10. Have you ever been raped? Yes ☐ No ☐

Appendix F: Family Violence Screening Questionnaire (FVSQ)

When you were 17 or younger, how often did a parental figure (answer separately for mother and father) behave in the following ways in the average year?

1. Hit, kick, or beat you.

	Never	Once a year	Twice a year	3-5 times a year	6-10 times a year	11-20 times a year	Over 20 times a year	No answer
Your mother:	☐	☐	☐	☐	☐	☐	☐	☐
Your father:	☐	☐	☐	☐	☐	☐	☐	☐

2. Seriously threatened your life.

	Never	Once a year	Twice a year	3-5 times a year	6-10 times a year	11-20 times a year	Over 20 times a year	No answer
Your mother:	☐	☐	☐	☐	☐	☐	☐	☐
Your father:	☐	☐	☐	☐	☐	☐	☐	☐

Appendix G: Psychological Maltreatment Review (PMR)

Children and adolescents can experience a wide range of events in their families and with others while growing up. Some of these may have been upsetting and some of them may have been less upsetting. In this part of the questionnaire is listed a number of things that you may have experienced when you were growing up. There are no right or wrong answers for any of these items as everyone's childhood experiences are unique.

When you were 17 or younger, how often did the following things happen to you in the average year? Answer separately for your *mother* (or other woman who lived with you when you were a child), and *father* (or other man who lived with you when you were a child).

If you had different men and/or women living with you when you were a child, pick the person who was around the longest in your life. If there wasn't a mother (or other woman who lived with you) or father (or other man who lived with you) in your life, choose the "No answer" option for that section.

1. Yelled at you.

	Never	Once a year	Twice a year	3-5 times a year	6-10 times a year	11-20 times a year	Over 20 times a year	No answer
Your mother:	☐	☐	☐	☐	☐	☐	☐	☐
Your father:	☐	☐	☐	☐	☐	☐	☐	☐

2. Left you alone for long periods of time, when they shouldn't have.
3. Were on your side when things were bad.
4. Insulted you.
5. Acted like they didn't seem to care about you.
6. Praised you when you did something good.
7. Criticized you.
8. Ignored you.
9. Said they loved you.
10. Said mean things about you.
11. Didn't do things for you that they should have.
12. Did things that let you know they loved you.
13. Called you names.
14. Acted like you weren't there, even though you were.

15. Hugged you.
16. Said you were stupid.
17. Weren't around when you needed them.
18. Took you places or did things with you.
19. Made fun of you.
20. Didn't do things they said they would do for you.
21. Encouraged you to have friends.
22. Tried to make you feel guilty.
23. Let you down.
24. Tried to make you feel better when you were upset or hurt.
25. Ridiculed or humiliated you.
26. Didn't seem to love you.
27. Talked to you.
28. Embarrassed you in front of others.
29. Didn't take care of you when they should have.
30. Helped you with homework or other things you had to do.

Appendix H: Experiences in Close Relationships (ECR)

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship.

Respond to each statement by indicating how much you agree or disagree with it.

1. I prefer not to show a partner how I feel deep down.

Strongly disagree			Neutral			Strongly agree	No answer
1	2	3	4	5	6	7	

2. I worry about being abandoned.

3. I am very comfortable being close to romantic partners.

4. I worry a lot about my relationships.

5. Just when my partner starts to get close to me I find myself pulling away.

6. I worry that romantic partners won't care about me as much as I care about them.

7. I get uncomfortable when a romantic partner wants to be very close.

8. I worry a fair amount about losing my partner.

9. I don't feel comfortable opening up to romantic partners.

10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.

11. I want to get close to my partner, but I keep pulling back.

12. I often want to merge completely with romantic partners, and this sometimes scares them away.

13. I am nervous when partners get too close to me.

14. I worry about being alone.

15. I feel comfortable sharing my private thoughts and feelings with my partner.

16. My desire to be very close sometimes scares people away.

17. I try to avoid getting too close to my partner.

18. I need a lot of reassurance that I am loved by my partner.

19. I find it relatively easy to get close to my partner.

20. Sometimes I feel that I force my partners to show more feeling, more commitment.

21. I find it difficult to allow myself to depend on romantic partners.

22. I do not often worry about being abandoned.

23. I prefer not to be too close to romantic partners.

24. If I can't get my partner to show interest in me, I get upset or angry.

25. I tell my partner just about everything.

26. I find that my partner(s) don't want to get as close as I would like.

27. I usually discuss my problems and concerns with my partner.

28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.

29. I feel comfortable depending on romantic partners.

30. I get frustrated when my partner is not around as much as I would like.

31. I don't mind asking romantic partners for comfort, advice, or help.

32. I get frustrated if romantic partners are not available when I need them.

33. It helps to turn to my romantic partner in times of need.

34. When romantic partners disapprove of me, I feel really bad about myself.

35. I turn to my partner for many things, including comfort and reassurance.

36. I resent it when my partner spends time away from me.

Appendix I: Drug Abuse Screening Test–10 (DAST-10)

Part 1: The following questions concern information about your use of drugs *not including alcoholic beverages or nicotine* during the past year. In the following statements "drug use" refers to the use of prescribed or over-the-counter drugs in excess of the directions OR any nonmedical or illicit use of drugs.
Indicate on how many occasions have you used the following types of drugs?

1. Marijuana
In the past year:
Never
1-2 times
3-5 times
6-9 times
10-19 times
20-39 times
40 or more times

Ever:
Never
1-2 times
3-5 times
6-9 times
10-19 times
20-39 times
40 or more times

2. LSD

3. Ecstasy/MDMA

4. Other hallucinogens (example: mushrooms)

5. Cocaine

6. Heroin

7. Crystal methamphetamine (“crystal meth”)

8. Inhalants (example: paint thinner)

9. Nonmedical use of pain medications (example: morphine, codeine)

10. Nonmedical use of sleeping medications (example: barbiturates)

11. Nonmedical use of anxiety/sedative medications (example: Valium, Xanax, Ativan)

12. Nonmedical use of stimulant medications (example: Ritalin, Concerta)

Part 2: Please answer all of the following questions. If you have never used any drugs, please answer NO to all of the following questions. Remember that these questions *do not* include alcoholic beverages or nicotine use.

		In the past year...		Before the past year...	
1.	Have you used drugs other than those required for medical reasons?	Yes	No	Yes	No
2.	Do you use more than one drug at a time?	Yes	No	Yes	No
3.	Are you unable to stop using drugs when you want to?	Yes	No	Yes	No
4.	Have you ever had blackouts or flashbacks as a result of drug use?	Yes	No	Yes	No
5.	Do you ever feel bad or guilty about your drug use?	Yes	No	Yes	No
6.	Does your partner (or parents) ever complain about your involvement with drugs?	Yes	No	Yes	No
7.	Have you neglected your family because of your use of drugs?	Yes	No	Yes	No
8.	Have you engaged in illegal activities in order to obtain drugs?	Yes	No	Yes	No
9.	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No	Yes	No
10.	Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding)?	Yes	No	Yes	No

Appendix J: Alcohol Use Disorders Identification Test (AUDIT)

Instructions: Please circle the option that best describes your answer to each question.

1. How often do you have a drink containing alcohol?

Never	Monthly or less	Two to four times a month	Two to three times a week	Four or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?

1 or 2	3 or 4	5 or 6	7 to 9	10 or more

3. How often do you have six or more drinks on one occasion?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

No	Yes, but not in the last year	Yes, during the last year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?

No	Yes, but not in the last year	Yes, during the last year

Appendix K: Dyadic Adjustment Scale-Brief Version (DAS-4)

You are being asked to answer the following questions because you indicated that you are currently in a relationship. Keeping in mind most persons have disagreements in their relationships, please respond to the following questions as they relate to your current relationship.

0 *Never*
1 *Rarely*
2 *Occasionally*
3 *More often than not*
4 *Most of the time*
5 *All of the time*

1. How often do you discuss or have you considered divorce, separation, or terminating your relationship? (*reverse code)*

2. In general, how often do you think that things between you and your partner are going well?

3. Do you confide in your mate?

4. The scale below represents different degrees of happiness in your relationship. The category "happy" represents the degree of happiness in most relationships. Please choose the number which best describes the degree of happiness, all things considered, of your relationship.

   0 *Extremely unhappy*
   1 *Fairly unhappy*
   2 *A little unhappy*
   3 *Happy*
   4 *Very happy*
   5 *Extremely happy*
   6 *Perfect*

5. How long have you been in your current relationship?
   ___ years ___ months