

The Links among Child Maltreatment, Eating Disorder Symptoms, Problematic Substance Use,
Coping Strategies, and Emotion Regulation in Women

by

Carolyn Mirotchnick

B.Sc., Queen's University, 2009

M.Sc., University of Victoria, 2014

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in the Department of Psychology

© Carolyn Mirotchnick, 2019

University of Victoria

All rights reserved. This dissertation may not be reproduced in whole or in part, by photocopy or
other means, without the permission of the author.

The Links among Child Maltreatment, Eating Disorder Symptoms, Problematic Substance Use, Coping
Strategies, and Emotion Regulation in Women

by

Carolyn Mirotchnick

B.Sc., Queen's University, 2009

M.Sc., University of Victoria, 2014

Supervisory Committee

Dr. Marsha Runtz, Supervisor
Department of Psychology

Dr. Erica Woodin, Departmental Member
Department of Psychology

Dr. Elizabeth Banister, Outside Member
School of Nursing

Abstract

This study examined the links among child maltreatment (i.e., child sexual abuse, child physical abuse, child emotional abuse, and child neglect), eating disorder symptoms, problematic use of drugs and alcohol, coping strategies, and emotion regulation in women. This study also examined coping strategies and emotion regulation as potential moderators of the links among child maltreatment, eating disorder symptoms, and problematic substance use. Maltreatment in childhood is linked with numerous adverse outcomes across the lifespan. For instance, the development of maladaptive coping styles, poor emotion regulation, substance use problems, and eating disorders all are linked to a history of child maltreatment, but how these factors interact has yet to be investigated. These constructs were examined through hierarchical multiple regressions in a sample of 383 women age 19 or older, recruited online.

Results indicated that women who experienced greater overall child maltreatment engaged in more problematic drug use and more problematic alcohol use and women with child sexual abuse (CSA) engaged in greater levels of problematic drug use. Avoidance coping was associated with greater levels of problematic drug use, dieting, bulimia and food preoccupation, and overall eating disorder symptoms. Women with more severe eating disorder symptoms and who used greater expressive suppression, also engaged in more problematic alcohol use. When considered together, all forms of child maltreatment were associated with greater avoidance and problematic drug and alcohol use, CSA survivors used less avoidance and expressive suppression, and child neglect (CN) survivors used more avoidance and expressive suppression. These findings suggest that health care professionals working with women survivors of child maltreatment should be aware of increased risk of developing substance use problems as well as less effective coping and emotion regulation strategies that may be stemming from victimization experiences. In addition, it may be helpful for clinicians working with women with eating disorders or problematic substance use to focus on improving coping and emotion regulation skills.

Table of Contents

Supervisory Committee	ii
Abstract.....	iii
Table of Contents.....	iv
List of Tables	vi
Introduction	1
Overview	1
Overview of the Aim of this Study.....	4
Literature Review	6
Definitions and Prevalence Rates of Child Maltreatment	6
Child Maltreatment and Eating Disorders	11
Child Maltreatment and Substance Use.....	18
Coping Strategies and Child Maltreatment	21
Emotion Regulation and Child Maltreatment.....	28
Coping and Substance Use	31
Emotion Regulation and Substance Use.....	34
Coping and Eating Disorders.....	36
Emotion Regulation and Eating Disorders	38
Eating Disorders and Substance Use	40
Summary.....	43
Common Limitations of the Research	44
Objectives of the Current Study	47
Hypotheses.....	50
Method.....	52
Participants	52
Procedure	52
Measures	53
Data Analysis Plan.....	61
Results	63
Preliminary Analyses.....	63
Frequencies and Means	63
Prevalence Rates.....	68
Comparisons between Data Collected from Various Websites	71
Intercorrelations among Demographic Variables and Variables of Interest	73
Intercorrelations among Key Variables	78
Hypothesis 1: Child Maltreatment and Eating Disorder Symptoms	82
Hypothesis 2: Child Maltreatment and Substance Use	82
Hypothesis 3: Child Maltreatment and Coping Strategies	83
Hypothesis 4: Child Maltreatment and Emotion Regulation.....	84
Hypothesis 5 and 6: Coping and Emotions Regulation Strategies and Substance Use	84
Hypothesis 7 and 8: Coping and Emotions Regulation Strategies and Eating Disorder Symptoms	86
Analyses Assessing Child Maltreatment, Coping Strategies, Emotion Regulation Strategies, and Key Dependent Variables	87
Moderation Analyses	90
Canonical Correlation Analysis.....	105
Discussion.....	108
Child Maltreatment and Eating Disorder Symptoms	112

Child Maltreatment and Substance Use.....	113
Child Maltreatment, Coping, and Emotion Regulation.....	116
Coping, Emotion Regulation, and Substance Use.....	120
Coping, Emotion Regulation, and Eating Disorders.....	122
Eating Disorders and Substance Use.....	125
Clinical Relevance.....	126
Limitations.....	127
Future Directions.....	131
References.....	137
Appendix A: Letter of Information for Implied Consent for participants accessing the survey via the Social Psychology Network, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research websites.....	177
Appendix B: Letter of Information for Implied Consent for participants accessing the survey via CrowdFlower.....	180
Appendix C: Online Debriefing Form for participants accessing the survey via the Social Psychology Network website, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research websites.....	183
Appendix D: Online Debriefing Form for participants accessing the survey via CrowdFlower.....	185
Appendix E: Demographic Information.....	187
Appendix F: Adverse Childhood Experience (ACE) Questionnaire.....	191
Appendix G: The Eating Attitudes Test–26 (EAT-26).....	193
Appendix H: Drug Abuse Screening Test–10 (DAST-10).....	194
Appendix I: Alcohol Use Disorders Identification Test (AUDIT).....	196
Appendix J: The Coping Strategy Indicator (CSI).....	199
Appendix K: Emotion Regulation Questionnaire (ERQ).....	200
Appendix L: Glossary of Terms.....	201

List of Tables

Table 1. Selected Demographic Characteristics of Participants.....	64
Table 2. Descriptive Statistics for Continuous Measures of Interest.....	66
Table 3. Frequencies of Lifetime Illicit and Non-Medical Drug Use.....	67
Table 4. Significant Pairwise Differences among the Means from a One-way ANOVA Assessing the Relation Between Ethnic Affiliation and Severity of Child Maltreatment.....	74
Table 5. Correlations among CM Total, Eating Disorders Symptoms, Problematic Drug Use, Problematic Alcohol Use, Problem-Solving coping, Seeking Social Support, Avoidance, Cognitive Reappraisal, Expressive Suppression, and Age	80
Table 6. Correlations among Key Variables, Drugs Used, and Substance Use Behaviours	81
Table 7. Regression Analysis for Child Maltreatment Variables Predicting Problematic Drug Use.....	83
Table 8. Regression Analysis for Child Maltreatment Variables Predicting Avoidance Coping	84
Table 9. Regression Analysis for Coping and Emotion Regulation Variables Predicting Problematic Drug Use.....	85
Table 10. Regression Analysis for Coping and Emotion Regulation Variables Predicting Problematic Alcohol Use	85
Table 11. Regression Analysis for Coping and Emotion Regulation Variables Predicting Dieting	86
Table 12. Regression Analysis for Coping and Emotion Regulation Variables Predicting Bulimia and Food Preoccupation	87
Table 13. Regression Analysis for Child Maltreatment and Coping Variables Predicting Eating Disorder Symptoms	88
Table 14. Regression Analysis for Child Maltreatment and Coping Variables Predicting Problematic Drug Use.....	89
Table 15. Regression Analysis for Child Maltreatment and Coping Variables Predicting Problematic Alcohol Use	90
Table 16. Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Child Maltreatment and Eating Disorder Symptoms	92
Table 17. Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Eating Disorder Symptoms.....	93
Table 18. Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use	94
Table 19. Hierarchical Multiple Regression Analysis for Seeking Social Support as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use	95
Table 20. Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use	96
Table 21. Hierarchical Multiple Regression Analysis for Cognitive Reappraisal as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use	97
Table 22. Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use	98
Table 23. Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Child Maltreatment and Problematic Alcohol Use.....	99
Table 24. Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Problematic Alcohol Use.....	100
Table 25. Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Drug Use.....	101
Table 26. Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use.....	102

Table 27. Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use	103
Table 28. Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use.....	104
Table 29. Canonical Solution for Child Maltreatment Predicting Difficulties in Adulthood for Functions 1 and 2.....	106

Introduction

Overview

The link between maltreatment during childhood and adverse outcomes across the lifespan is well established in the literature (e.g., Caslini et al., 2016; Gilbert et al., 2009; Johnson, Cohen, Kasen, & Brook, 2002; Turner, Finkelhor, & Ormrod, 2006; Scher, Forde, McQuaid, & Stein, 2004). For instance, childhood maltreatment has been found to be associated with increased risk for eating disorders in adolescence and adulthood (Johnson et al., 2002), traumatic stress symptoms in adulthood (Evans, Steel, & DiLillo, 2013), adult insecure attachment patterns (Hocking, Simons, & Surette, 2016; Styron & Janoff-Bulman, 1997), adult anxiety (Cougler, Timpano, Sachs-Ericsson, Keough, & Riccardi, 2010), problematic alcohol use in adulthood (Brems, Johnson, Neal, & Freemon, 2004; Goldstein, Flett, & Wekerle, 2010), illicit substance use in adolescence and adulthood (Lo, Kim, & Church, 2008), childhood and adolescent depression, anger, aggression (Turner et al., 2006), and suicidality in preadolescence and adulthood (Briere, Madni, & Godbout, 2015; Taussig, Harpin, & Maguire, 2014).

A great deal of the extant literature has exclusively examined the impact of child sexual abuse, even though other types of abuse also appear to be associated with adjustment following abusive experiences (Evans et al., 2013; Gipple, Lee, & Puig, 2006). Furthermore, while a number of studies have focused on only one type of child maltreatment, individuals who have experienced interpersonal trauma in childhood (e.g., sexual abuse, psychological maltreatment, or physical abuse) rarely experience a single form of abuse (Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005). Nonetheless, previous researchers often have collapsed multiple kinds of abuse into a single construct and thus have neglected to examine the unique impact of multiple types of maltreatment (Arata et al.). Further studies on child sexual abuse, child physical abuse, child emotional abuse, and child neglect are therefore essential in order to examine these complex experiences and to increase understanding of the specific risk factors associated with each form of victimization.

The development of maladaptive coping styles (Gipple et al., 2006), emotion regulation difficulties (Fernando et al., 2014), substance use problems (Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013), and eating disorders (Johnson et al., 2002) have been linked to a history of child maltreatment, but how all these factors interact have yet to be explored. Examining these variables is imperative, as each has been associated with increased risk of numerous psychological and physical health difficulties throughout the lifespan. For instance, a history of child maltreatment been associated with a variety of subsequent problems (e.g., traumatic stress symptoms, adult insecure attachment patterns, eating disorders, etc.; Evans et al., 2013; Hocking et al., 2016; Johnson et al., 2002). In addition to these, having a coexisting substance use disorder and a history of child maltreatment has been associated with increased risky sexual behaviours, aggression, emotion dysregulation, suicidal ideation and attempts, anxiety, and depression (Banducci, Hoffman, Lejuez, & Koenen, 2014; Keyser-Marcus et al., 2014). In general, substance use has been associated with many serious concerns, such as poor physical health outcomes, decreased job productivity, unemployment, and criminal activity (Rehm et al., 2006). Eating disorders have been associated with serious and potentially life threatening health risks, including cardiovascular disease, dehydration, dental problems, osteoporosis, kidney infections, self-harm, dissociation, and suicidality (Waller et al., 2007). Other psychological comorbidities that accompany eating disorders include anxiety, depression, obsessive-compulsive disorders, posttraumatic stress disorder (PTSD), substance use disorders, and personality disorders (Fouladi et al., 2015; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). In addition, both substance use and eating disorders are found to co-occur with one another (American Psychiatric Association, 2013; Bahji et al., 2019; Fouladi et al., 2015).

Given this wide array of associated difficulties, it is essential to take an in-depth look at which factors may help promote positive adjustment among individuals with a history of child maltreatment, particularly those who struggle with disordered eating symptoms and/or substance use problems.

Because associations between substance use and eating disorders have often been found, it is especially important to take a closer look at these behaviours and to examine variables that might contribute to or impact their development (e.g., American Psychiatric Association, 2013; Anderson, Simmons, Martens, Ferrier, & Sheehy, 2006; Barry & Piazza-Gardner, 2012; Fouladi et al., 2015; Gadalla & Piran, 2007). One set of related factors is coping tactics and emotion regulation strategies used to manage stressful situations, as child maltreatment, problem substance use, and eating disorder symptoms all have been found to be associated with less effective coping skills and emotion regulation (Brockmeyer et al., 2014; Fernando et al., 2014; Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007; Gipple et al., 2006; McConnell, Memetovic, & Richardson, 2014; VanBoven & Espelage, 2006). While maladaptive coping tactics have been associated with increased psychological distress, anxiety, and depression (Sarin, Abela, & Auerbach, 2005), more adaptive coping strategies have been linked to lower levels of distress and better physical health (Connor-Smith & Compas, 2004). In particular, researchers highlight the importance of assessing the impact of coping strategies when investigating the long-term effects of child maltreatment on adjustment, since the coping efforts used by survivors of childhood victimization may have an important influence on the extent to which they will continue to struggle with the aftermath of their experiences throughout their lives (Domhardt, Münzer, Fegert, & Goldbeck, 2015; Runtz & Schallow, 1997).

Difficulties with emotion regulation have also been found to be particularly relevant among survivors of child maltreatment, indicating that less typically effective emotion regulation could be a risk and/or maintaining factor for later mental health problems such as PTSD (Ehring & Quack, 2010; Messman-Moore & Bhuptani, 2017). Researchers also have suggested that using substances to cope with aversive emotions may account for the link between eating disorders and substance use problems (Khaylis, Trockel, & Taylor, 2009; Luce, Engler, & Crowther, 2007). In general, emotion regulation refers to the ways in which individuals try to influence which emotions they experience, when they

experience them, and how they are experienced or expressed (Gross 1998, 2015). A growing body of research has been focusing on emotion regulation in order to better understand the development, maintenance, and underlying function of different mental health related symptoms and problem behaviours (Gratz & Roemer, 2004). For instance, difficulty with emotion regulation has been associated with anxiety, depression, PTSD, borderline personality disorder, eating disorders, substance use disorders, and a history of child maltreatment (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Ehring & Quack, 2010; Fairburn, Cooper, & Shafran, 2003; Fernando et al., 2014; Fox, Hong, & Sinha, 2008; Stepp et al., 2014; Treasure, Corfield, & Cardi, 2012). Nonetheless, despite its clinical importance, more research is needed on the role of emotion regulation difficulties in the development of long-term mental health-related struggles (Gratz & Roemer, 2004). Thus, it is important for us to understand more about the impact of different ways of coping and regulating emotions (i.e., the moderating roles of coping and emotion regulation) on the association between child maltreatment and eating disorder symptomology, child maltreatment and problem substance use, as well as eating disorder symptoms and substance use. Subsequently, findings can be used to improve intervention and prevention strategies for survivors of child maltreatment in general, and especially those who struggle with substance use and/or eating disorders.

Overview of the Aim of this Study

The aim of this study is to examine how typically less effective coping and emotion regulation strategies, substance use, and eating disorder symptoms are linked among women survivors of four types of child maltreatment: child sexual abuse, child physical abuse, child emotional abuse, and child neglect. In particular, this study investigated whether women with a history of any of these four types of childhood maltreatment were more likely to have symptoms of eating disorders, engage in greater levels of problematic drug and alcohol use, use coping strategies that are typically less effective (i.e., more avoidant coping, less problem-solving, and less social support seeking coping), and use typically

less effective emotion regulation strategies (i.e., less cognitive reappraisal and more expressive suppression) than women without a history of child maltreatment. Furthermore, this study assessed whether women who use coping strategies that are typically less effective (Gipple et al., 2006; Ghaderi & Scott, 2000; McConnell et al., 2014; Wright, Crawford, & Sebastian, 2007) engaged in greater levels of substance use, and are more likely to have symptoms of eating disorders than women with more adaptive coping (Ghaderi & Scott, 2000; McConnell et al., 2014). I also examined whether women who use emotion regulation strategies that are typically less effective engaged in greater levels of substance use and are more likely to have symptoms of eating disorders than women with more adaptive emotion regulation (Aldao et al., 2014; Brockmeyer et al., 2014; Fox et al., 2007).

Finally, the moderating role of coping style and emotion regulation in the relations between child maltreatment and eating disorder symptoms, child maltreatment and substance use, as well as eating disorder symptoms and substance use, were assessed. More specifically, this study assessed whether a stronger association between child maltreatment and problematic substance use or eating disorder symptoms exists for survivors of child maltreatment who rely on less effective coping or emotion regulation techniques compared to those who use more adaptive coping and emotion regulation strategies. This study also assessed whether a stronger link exists between eating disorder symptoms and problematic substance use for women with disordered eating who rely on typically less effective coping and emotion regulation techniques compared to those who use more adaptive coping and emotion regulation strategies.

Literature Review

Definitions and Prevalence Rates of Child Maltreatment

Because operational definitions and prevalence rates for different types of child maltreatment tend to vary depending on factors such as the way each type of abuse is conceptualized and categorized, the sample used (e.g., undergraduates, individuals from the community, all women/men, etc.), and the type of measure or questions used to assess abusive experiences, the following section will review definitions and rates for child maltreatment in general, as well as the four types of child maltreatment that are the focus of this study (i.e., child sexual abuse, child physical abuse, child emotional abuse, and child neglect). Please also see Appendix L for a glossary of terms. Based on the definition from the Public Health Agency of Canada (2012), child maltreatment refers to any time a parent or someone in a position of responsibility, power, or trust subjects a child to any type of harm, or risk of harm by acts of commission (i.e., acting directly) or omission (i.e., failing to provide a necessary component of care). It can encompass physical, psychological, social, emotional or sexual abuse of a child and it can endanger the safety, survival, self-confidence, and development of a child. There are four widely accepted forms of child maltreatment: sexual (i.e., the sexual exploitation of a child), physical (i.e., using physical force against a child), emotional (i.e., harming a child's intellectual, emotional, psychological, or social development), and neglect (i.e., failing to meet the physical, psychological, or emotional needs of a child).

Child maltreatment continues to be a serious social problem and rates of reported child maltreatment seem to be increasing in Canada (Trocmé et al., 2013). Specifically, the number of reported cases of child maltreatment in Canada has almost doubled from 1998 to 2008, at which time there were 235,842 reports of maltreatment (i.e., 3.92% of children experiencing some type of abuse in 2008; Trocmé et al., 2010). Although data from the United States suggest there is a decrease in the number of cases of child maltreatment (i.e., child sexual abuse, child physical abuse, and child neglect) that have been investigated and substantiated by child protection services (Jones & Finkelhor, 2010),

data from the Canadian Incidence Study suggest there has been an increase in all forms of child maltreatment except child sexual abuse (Collin-Vézina, Hélie, & Trocmé, 2010). Indeed, in all provinces other than Quebec, the number of substantiated cases of child sexual abuse have decreased (as reported by child protection services). Explanations for these differences in prevalence rates remain unclear, but some possible factors that may impact the number of substantiated cases include: individuals' willingness to disclose abusive experiences to the authorities, the manner in which cases of child maltreatment are being counted by the police or child protective services, and whether the authorities are taking into account repeated allegations (Collin-Vézina et al., 2010).

In a nationally representative sample of adults from the Canadian general population (ages ranged from 18 to 60 years old), 32.1% of women participants endorsed exposure to child maltreatment (Afifi et al., 2016). Similarly, in another recent study assessing prevalence rates of child maltreatment in a Canadian community sample (aged 15 years or older), 30.3% of women reported experiencing child maltreatment (Afifi et al., 2014). Conversely, among women in a sample of college students, 54.0% reported some type of child maltreatment (Maples, Park, Nolen, & Rosén, 2014). One explanation for this discrepancy is that rates of substantiated cases of child maltreatment are likely to be gross underestimates of the actual scope of this problem, as most episodes of maltreatment are either never reported, reported but not investigated, or investigated but not substantiated because of insufficient evidence (Brennan & Taylor-Butts, 2008; Kaukinen, Buchanan, & Gover, 2015; Maples et al., 2014; Sedlak et al., 2010).

Child sexual abuse (i.e., CSA) occurs when an individual exploits a child in a sexual manner and encompasses any sexual act between a child under 16 years old and an adult, between an adult and a child of 16 to 18 years old who does not provide consent, and any sexual exploitation (e.g., prostitution, pornography) of a child younger than 18 years old (Department of Justice Canada, 2011). The age of consent for sexual interactions is 16 years old in Canada, however there are exceptions if the other individual is close to the same age. Sexual activities comprise all situations in which sexual

contact occurs between a child and (a) someone who has power or authority over the child, (b) someone on whom the child depends, or (c) someone who the child trusts. Perpetrators of CSA may include family members, teachers, or coaches, and examples of CSA consist of fondling, inviting the child to touch or be touched in a sexual way, intercourse, rape, incest, exhibitionism, sodomy, or having the child take part in prostitution or pornography. In a 2008 report assessing reported incidents of child maltreatment across Canada using data from child welfare authorities, CSA was identified as the primary type of abuse in 3% of the substantiated cases (Trocmé et al., 2010). Among women participants from a Canadian community sample, 22.1% reported experiencing CSA (MacMillan, Tanaka, Duku, Vaillancourt, & Boyle, 2013) and in a 2011 meta-analysis examining self-reported cases of CSA throughout the world, the rate of CSA among women in both Canada and the United States was 20.1% (Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011).

Child physical abuse (i.e., CPA) refers to deliberately using force against a child that leads to injury or has the potential to lead to injury (Department of Justice Canada, 2011). It can consist of hitting, beating, shaking, pushing, choking, biting, burning, kicking, assaulting with a weapon, female genital mutilation, holding a child under water, or any other type of dangerous use of force. According to the World Health Organization (1999), CPA is an interaction or lack of interaction that leads to actual physical harm or risk of physical harm and is perpetrated by a parent or individual in a position of responsibility, authority, or trust. Findings from the 2008 Canadian Incidence Study of Reported Child Maltreatment and Neglect revealed that CPA was the main form of abuse in 20% of substantiated investigations (Trocmé et al., 2010). In a more recent meta-analysis investigating global prevalence rates of CPA by a parent or other person in a position of trust, authority, or responsibility, Stoltenborgh, Bakermans-Kranenburg, van IJzendoorn, and Alink (2013) reported a combined CPA rate of 17.7% across all studies reviewed. Rates were divided into combined prevalence reported in informant studies (0.3%) and combined frequency based on self-report measures of CPA (22.6%). In a large community sample of Canadian women ($N = 969$), 28.2% endorsed CPA experiences (MacMillan et al., 2013).

Finally, as shown in a representative sample in the United States, 54.2% of women endorsed experiencing CPA (Sugaya et al., 2012).

Child emotional abuse (i.e., CEA) occurs when a child's sense of self is damaged through actions or omissions that lead to (or have the potential to lead to) significant struggles with mental health, cognition, behaviour, or emotions (Department of Justice Canada, 2011). This can include verbally threatening, socially isolating, or intimidating a child, as well as terrorization, exploitation, exposure to family violence, or consistently demanding too much of a child. Similarly, Caslini, Bartoli, Crocarno, Dakanalis, Clerici, and Carrà (2016) defined CEA as a psychologically harmful "act of omission and commission . . . that render[s] the child vulnerable, damaging immediately or ultimately the behavioral, cognitive, affective, social, and physiological functioning of the child" (p. 80) and is perpetrated by parents or persons in positions of power. Based on the 2008 Incidence Study of Reported Child Maltreatment and Neglect, CEA was the primary abuse of concern in 9% of substantiated cases (Trocmé et al., 2010). In a large representative community sample from the United States ($N = 3,201$), 19.2% of women reported experiencing CEA (Chiu et al., 2013), while in a sample of 184 French Canadian women involved in an intimate relationship, CEA was endorsed by 43% of the women (Bigras, Godbout, Hébert, Runtz, & Daspe, 2015).

Child neglect (i.e., CN) consists of chronic, repeated incidents in which a caregiver fails to meet the physical, psychological, or emotional needs of a child (Department of Justice Canada, 2011). This may entail failure to provide a child with food, clothes, shelter, cleanliness, medical care, protection from danger, love, safety, or a sense of self-worth. CN was operationalized by Oshri, Carlson, Kwon, Zeichner, and Wickrama (2016) as a lack of necessary, developmentally appropriate care on behalf of parents or caregivers, despite having the necessary financial, physical, and emotional resources. CN was found to be the most common type of abuse in the 2008 Canadian Incidence Study of Reported Child Maltreatment and Neglect report and was the primary type of maltreatment in 34% of substantiated investigations (Trocmé et al., 2010). A meta-analysis by Stoltenborgh, Bakermans-

Kranenburg, and van IJzendoorn (2013) investigated self-reported CN among children and adults (both men and women) and divided CN into subtypes: physical neglect (i.e., when a child's physical needs are not met, such as lack of proper nutrition, clothing, personal hygiene, supervision, and medical care) and emotional neglect (i.e., when a child's emotional needs are not met, such as lack of proper nurturance and love, witnessing domestic violence, failing to provide care for emotional or behavioural struggles, and a lack of proper structure). In their investigation of global self-reported prevalence rates for these two forms of CN, they reported that 16.3% of participants experienced child physical neglect and 18.4% endorsed child emotional neglect. In a cross-sectional general population-based study that investigated the annual rates of CN as reported by Canadian parents ($N = 4,402$), one or more episodes of CN in the past year was experienced by 25.9% of children 6 months to 4 years old, 29.4% of children 5 to 9 years old, and 20.6% of children 10 to 15 years old (Clément, Bérubé, & Chamberland, 2016). Among college women, 23.9% reported experiencing emotional neglect, 3.1% endorsed physical neglect, and 25.1% reported experiencing supervision neglect (i.e., when a child is harmed because of inadequate supervision and monitoring; Keeshin & Dubowitz, 2013; Maples et al., 2014).

Despite the discrepancies in prevalence rates among different studies, child maltreatment is evidently a widespread phenomenon that endangers millions of children throughout the world and is a major public health burden as it is associated with numerous adverse consequences across the lifespan (e.g., suicidality, problem substance use, attention deficit disorder, Afifi et al., 2014; Afifi et al., 2016; Scher et al., 2004; Stoltenborgh et al., 2013). Improving prevention strategies and services provided to survivors could not only be instrumental in reducing harm at the individual level, but could ultimately benefit society as a whole. Further investigation of this issue is therefore crucial. In examining and understanding these four types of child maltreatment, it is not only important to review definitions and prevalence rates, but it also is necessary to look at long-term sequelae stemming from these adverse childhood experiences.

Child Maltreatment and Eating Disorders

To begin this literature review of the links between early victimization and adverse outcomes, I will first focus on eating disorders. Eating disorders consist of disturbances in eating or behaviour associated with eating that lead to changes in food intake or absorption and that result in harm to physical health, psychological wellbeing, and/or social functioning (American Psychiatric Association, 2013). Eating disorder subtypes include anorexia nervosa (characterized by restricted energy intake that results in emaciation, a pronounced fear of gaining weight or getting fat, behaviours that aim to prevent weight gain, and a distorted body image), bulimia nervosa (characterized by regular periods of binge eating followed by compensatory strategies in an effort to interfere with weight gain, and over-evaluation of body shape and weight), and binge eating disorder (characterized by regular periods of binge eating associated with severe distress and that are not followed by any compensatory strategies; American Psychiatric Association, 2013). Binge eating consists of eating an excessively large amount of food in a discrete amount of time during which individuals feel as though they cannot control their eating. Compensatory strategies to prevent weight gain are also known as purges, and they may include vomiting, inappropriate use of laxatives, and misuse of diuretics. Other compensatory behaviours include excessive exercise and fasting (American Psychiatric Association, 2013).

Eating disorders are a complex health problem that is not only the source of psychological distress but also places sufferers at serious physical health risk (Kärkkäinen, Mustelin, Raevuori, Kaprio, & Keski-Rahkonen, 2018; Waller et al., 2007). Eating disorders are considered to have the greatest mortality rates of all mental disorders (Waller et al.). For instance, in a meta-analysis by Arcelus, Mitchell, Wales, and Nielsen (2011) mortality rates (i.e., the ratio of actual deaths in a population to expected deaths according to demographics) were calculated to be highest for anorexia nervosa (i.e., a rate of 5.9 deaths per 1000 person-years), followed by 1.9 deaths per 1000 person-years of follow-up for bulimia nervosa, and 1.9 deaths per 1000 person-years of follow-up for eating disorder not otherwise specified. In addition, individuals with eating disorders are at risk for cardiovascular

disease, dehydration, dental problems, osteoporosis, and kidney infections, among others (Waller et al.). Mental health symptoms and diagnoses that are frequently comorbid with eating disorders include low self-confidence, perfectionism, self-harm, dissociation, suicidality, social isolation, impaired concentration, anxiety, depression, obsessive-compulsive disorders, PTSD, substance use disorders, and personality disorders (e.g., borderline personality disorder; American Psychiatric Association, 2013; Fouladi et al., 2015; Swanson et al., 2011; Waller et al.). Clearly eating disorders are associated with major physical and psychological impairments and examining factors associated with increased vulnerability for disturbed eating is fundamental in order to provide effective prevention and intervention strategies to those at risk.

Although eating disorders have been diagnosed in men, research points to a much greater prevalence rate of eating disorders and related symptoms in women (e.g., Dooley-Hash, 2013; Striegel-Moore et al., 2009). For eating disorder prevalence in general, the literature indicates there is a ratio of approximately 10:1 women to men (Dooley-Hash, 2013; Mendle, 2014). In terms of specific types of eating disorders, a study using a US nationally representative sample of adolescents (aged 13 to 18 years old) found that 1.3% of women compared to 0.5% of men met diagnostic criteria for bulimia nervosa and 2.3% of women compared to 0.8% of men met criteria for binge eating disorder (Swanson et al., 2011). In another study using a nationally representative sample of men and women from the United States (18 years and older), the estimated lifetime prevalence of anorexia nervosa was 0.9% among women compared to 0.3% among men (Hudson, Hiripi, Pope, & Kessler, 2007). The estimated lifetime prevalence of bulimia nervosa was 1.5% among women and 0.5% among men, while for binge eating disorder it was 3.5% among women versus 2.0% among men (Hudson et al., 2007). Gadalla and Piran (2007) used data from the 2002 Canadian Community Health Survey, which surveyed individuals from across Canada aged 15 years and older, and found that 0.5% of men and 2.8% of women were at risk of having an eating disorder (as classified by the Eating Attitude Test-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). Data from the Canadian Institute for Health Information (2013) showed that the

rate of hospitalization between 2012 and 2013 for eating disorders among women was 11.7 per 100,000 compared to a rate of 0.8 per 100,000 for men, which is approximately 15 times more women than men.

Besides differences in prevalence rates, there appear to be significant gender differences in eating disorder symptomology. In particular, women have been found to be more likely than men to report body checking, body avoidance, loss of control while eating, fasting, and vomiting (Striegel-Moore et al., 2009). Meanwhile, binge eating is one of the few symptoms of disordered eating that seems to be reported at similar rates in both genders (Hudson et al., 2007). Furthermore, it is important to study eating disorders in women as researchers describe a number of intersecting high-level risk factors that are unique to women, including social variables (e.g., socioeconomic status and ethnicity), the drive for thinness, and poor body image (Piran, 2010). For instance, Piran's review examined risk factors for eating disorders using a feminist perspective. This perspective looks at the multifaceted effects of gender-related power structures and gender privilege on the way women experience social power, on the way women view their self-worth, and on the way women experience their bodies. Piran discussed the importance of taking into account the negative impact of factors such as sexualization, objectification, and sexual victimization on women's body image. Using a feminist lens, poor body image and symptoms of eating disorders may be partially explained by women's internalization of body size and shape ideals based on messages from Western culture (Fallon, Katzman, & Wooley, 1994; Maine, 2000; Tylka, 2004). Tylka noted that two of these objectifying messages are that women's self-worth should depend on their physical appearance (which leads to women constantly monitoring the way they look) and that women can shape their bodies to conform with the thin-ideal societal prototype. Not surprisingly, women who view their bodies as objects and are more concerned with their physical appearance than their internal characteristics (e.g., emotions, personality, the functioning of their bodies) are at greater risk of using destructive weight control techniques when they experience body dissatisfaction (Fallon et al., 1994; Laporta-Herrero, Jáuregui-Lobera, Barajas-

Iglesias, & Santed-Germán, 2018; Maine, 2000; Striegel-Moore, Silberstein, & Rodin, 1986). In sum, due to the important gender-related sociocultural risk factors outlined above, as well as to avoid any overgeneralizations across genders, this study focussed exclusively on women.

Researchers have found a link between experiences of maltreatment in childhood and an increased risk of developing subsequent eating disorder symptoms (e.g., Johnson et al., 2002). For instance, in a 10-year longitudinal study conducted by Johnson and colleagues, the effects of childhood adversities on struggles with eating and weight during adolescence and adulthood was investigated. They assessed a community sample of 782 men and women ranging in average age from 6 years old at the start of the study to 22 years old by the end of the study, and controlled for covariates such as difficult childhood temperament (e.g., temper tantrums, moodiness) and eating problems in childhood. Items from the Diagnostic Interview Schedule for Children (Costello, Edelbrock, Duncan, & Kalas, 1984) were used to assess diagnostic criteria for eating disorders, as well as eating and weight related problems. Maltreatment was assessed using official reports of substantiated abuse, self-reports (when participants were above 18 years of age), and interviews with participants' mothers. Results indicated that individuals with a history of CSA or physical neglect were at increased risk for eating disorders and other eating or weight related struggles (e.g., recurrent fluctuations in weight, self-induced vomiting) in adolescence or early adulthood (Johnson et al.). Among the women participants, child physical neglect was associated with obesity, CSA was associated with self-induced vomiting, and CPA was associated with low body weight. Meanwhile among the men, child physical neglect was associated with an increased risk for using medication to lose weight and self-induced vomiting. Results indicate that unique relations may be found among different types of child maltreatment and eating or weight related problems, and that these associations may also differ between men and women. Nonetheless, Johnson and colleagues emphasized that due to inconsistent results from previous studies regarding the links between adversities in childhood and the subsequent development of eating and weight problems, future research is needed to further explore these associations.

In an effort to elucidate the relation between adverse experiences in childhood and eating disorders, Romans, Gendall, Martin, and Mullen (2001) designed a study to assess why certain women with a history of CSA developed a subsequent eating disorder (i.e., anorexia nervosa or bulimia nervosa) while other women CSA survivors did not. They used a randomly selected sample of 477 adult women from the New Zealand electoral rolls and compared women with a history of CSA to women with no reported CSA experiences. Higher rates of eating disorders were found for CSA survivors, and those survivors who were younger, who experienced earlier menarche, and paternal overcontrol were at increased risk of developing an eating disorder. The fact that belonging to a younger age cohort had an independent impact on the development of an eating disorder may imply that eating disorder prevalence rates are increasing among more recent birth cohorts. Romans et al. also discussed how parental overcontrol may reduce children's sense of autonomy. This may result in a desire to gain control over their lives, which also has been found to be a contributing factor in the development of eating disorders (Froreich, Vartanian, Grisham, & Touyz, 2016; Reid, Burr, Williams, & Hammersley, 2008; Slade, 1982). In addition, menarche often is associated with an increase in body fat as well as changes in body shape, which can be another risk factor for developing an eating disorder (Striegel-Moore et al., 2001). Indeed, Turner, Runtz, and Galambos (1999) found that in a sample of adolescent girls, experiencing CSA was associated with an earlier age of menarche and with an older subjective age (i.e., feeling older than they actually were). In turn, an earlier onset of puberty has been associated with eating related struggles among adolescent girls (Graber, Brooks-Gunn, Paikoff, & Warren, 1994). Taken together, these studies suggest that women CSA survivors who experience an earlier pubertal onset may be at particularly high risk of developing an eating disorder, which could help to inform and strengthen eating disorder prevention strategies.

In order to explain these risk factors that are associated with eating disorders among women with a history of CSA, Romans and colleagues (2001) linked the desire to gain a sense of autonomy and to avoid sexual maturation as being common among women with eating disorders as well as

women with a history of CSA. Further research should address the pathways through which CSA, sexual maturation, and perceived lack of autonomy impact the development of eating disorders in women, however addressing all these pathways (except those stemming from CSA experiences) are not the focus of this study.

Eating disorder experts often have disagreed about the role of CSA in the development of eating disorders. For example, Malecki, Rhodes, and Ussher (2018) described how experiencing CSA may lead to survivors trying to increase their sense of control over their bodies or trying to detach themselves from their bodily experiences, which in turn, impacts their relationship with eating (e.g., food restriction and/or binges). In addition, Kearney-Cooke and Striegel-Moore (1996) addressed the debate about whether CSA is a specific risk factor for eating disorders or a risk factor for psychological disorders in general. According to Kearney-Cooke and Striegel-Moore, proponents of a direct link between CSA and body image believe that due to their victimization experiences, CSA survivors tend to view their bodies as a source of shame, guilt, weakness, and betrayal. In order to make sense of and cope with their experiences, they may also link the cause of their abuse with aspects of their looks. As stated in the article, women who believe that being physically attractive played a role in their sexual abuse experiences may turn to overeating in an effort to protect themselves from further sexual victimization (Kearney-Cooke & Striegel-Moore). Another explanation of the link between CSA and eating disorders is that CSA survivors may seek to lose weight in order to avoid psychosexual maturity such as menstruation and sexual impulses, which may also be sources of guilt and shame associated with their painful CSA experiences (Kearney-Cooke & Striegel-Moore). Some CSA survivors may turn to purging in an attempt to purify themselves and reduce their feelings of shame. A third possible theory discussed by Kearney-Cooke and Striegel-Moore regarding the role of CSA in the etiology of eating disorders is that CSA experiences may result in survivors feeling as though they have no control over their bodies. In general, control is a central feature in the development of an eating disorder, and

CSA survivors in particular may strive to restrict their intake of food in an effort to regain a sense of personal mastery and control over their bodies (Kearney-Cooke & Striegel-Moore).

While much of the previous research has focused on CSA as a risk factor for developing eating disorders, fewer studies have explored the contribution of other types of child maltreatment (e.g., CEA; Burns, Fischer, Jackson, & Harding, 2012). In a recent study investigating the impact of CSA, CPA, and CEA on eating disorder symptoms, Burns and colleagues assessed a large sample of women college students ($N = 1,254$). Results indicated that CEA was the only form of maltreatment that remained uniquely associated with the development of eating disorder symptoms after controlling for the other types of child maltreatment. They also found support for emotion dysregulation as a partial mediator in the relation between CEA and eating disorder symptoms. These findings highlight the importance of examining the impact of CEA along with other types of maltreatment in studies looking at disturbed eating behaviours. Furthermore, the authors emphasized the need for future studies to explore possible pathways through which childhood maltreatment impacts subsequent symptoms of eating disorders using more diverse samples. In this way, clinicians working with individuals struggling with eating disorders can also better understand which areas to target for effective intervention.

In order to further tease apart the associations among different types of child maltreatment and eating disorders, Caslini and colleagues (2016) conducted a meta-analysis of 32 publications investigating CSA, CPA, CEA, anorexia nervosa, bulimia nervosa, and binge eating disorder. In general, they found a positive association between all types of childhood maltreatment and eating disorders. Results also demonstrated a positive relation between CSA and bulimia nervosa as well as CSA and binge eating disorder. CPA was associated with all three types of eating disorders and although there were few studies examining the impact of CEA, they found that emotional maltreatment was positively related to bulimia nervosa and binge eating disorder. Despite their findings, the authors noted that the ways in which previous experiences of abuse impact eating and weight struggles remain

unclear, and the role of other variables that might moderate the association between childhood maltreatment and eating disorders should be explored.

Child Maltreatment and Substance Use

Not only has child maltreatment been linked with increased risk for eating disorders (Johnson et al., 2002), but researchers also have long established an association between child maltreatment and subsequent substance use (i.e., alcohol and drugs; Goldstein et al., 2010; Herrenkohl et al., 2013; Lo et al., 2008; O'Sullivan, Watts, & Shenk, 2018; Runtz, 2007). Indeed, in a recently published longitudinal study, Herrenkohl and colleagues (2013) explored the link between child maltreatment (i.e., CPA and CN), mental health, substance use, and physical health in adulthood. A sample of 355 men and women were divided into two groups: those with documented cases of child maltreatment and those who had no history of abuse. Findings confirmed the longstanding negative impact of child maltreatment on functioning in adulthood, including an increased risk of substance use. Compared to the control group with no abusive experiences in childhood, the group with abusive histories was significantly more likely to have experienced lifetime alcohol problems and substance abuse symptoms, to be at moderate or high risk for substance abuse, and to have used marijuana in the past year.

Investigators often have sought to elucidate the underlying influencing factors and theoretical underpinnings of the association between a history of child maltreatment and later problematic substance use (Herrenkohl et al., 2013). One of the most widely accepted explanations is the self-medication hypothesis (Hien, Cohen, & Campbell, 2005; Khantzian, 1985), which proposes that substance use stems from an individual's attempt to temporarily alleviate painful subjective states associated with psychological disturbances that may otherwise be viewed as overwhelming or unmanageable. Among survivors of child maltreatment, substances may be used in order to reduce the negative emotional, neurobiological, and social effects of previous experiences of maltreatment (Anda et al., 1999; Locke & Newcomb, 2004). Furthermore, experiences of childhood victimization have been found to disrupt individuals' abilities to self-regulate (i.e., their abilities to filter, process, and

organize experiences or information, such as managing and controlling cognition, affect, and behaviour; Hien et al., 2005). In turn, difficulties with self-regulation have been associated with an increased risk for initiation and abuse of substances (Hien et al., 2005; Tarter, 2002). Given the powerfully addictive nature of substances, this can lead to long-term struggles with substance use disorders and related problems.

As there is limited research on potential mediators and moderators of the association between a history of child maltreatment and later problematic substance use, White and Widom (2008) conducted a study using a sample of 582 adult women with a history of court-documented cases of child maltreatment (i.e., CPA, CSA, and CN) and compared them with women who had experienced no abuse in childhood. Findings indicated that PTSD, life stressors, and delinquent behaviours were all partial mediators of the impact of child maltreatment on subsequent illicit drug use frequency as well as on substance use problems (i.e., both drugs and alcohol; e.g., going to work or school under the influence, neglecting responsibilities due to substance use, or experiencing withdrawal symptoms). A direct link also was found between child maltreatment and problems related to substance use. PTSD and life stressors predicted subsequent drug use and drug use related problems. Based on these results, the authors emphasized the importance of early interventions for survivors of maltreatment (particularly those with symptoms of PTSD) in order to improve how they cope with stressful events and to prevent the development of later substance use problems.

Although exposure to child maltreatment has been widely accepted as a risk factor for a number of adverse mental and physical health consequences, the extent to which child maltreatment plays a *causal* role in these negative outcomes remains unknown (Thornberry, Henry, Ireland, & Smith, 2010). In an attempt to establish causality, Thornberry and colleagues designed a study using propensity score matching to assess whether maltreatment (i.e., CPA, CSA, or CN) in childhood and adolescence caused subsequent involvement in crime and violence, substance use, risky health behaviours, and internalizing problems in adulthood. They also compared the negative impact of maltreatment in

childhood only (i.e., one or more substantiated incident from birth to 11 years old) to any maltreatment during adolescence (i.e., one or more substantiated incident from 12 to 17 years old or abuse in both childhood and adolescence) in order to investigate the influence of the developmental stage in which the abuse occurs. The sample consisted of 907 men and women recruited from the community and followed them longitudinally from age 14 to 31. Evidence was found for a causal impact of maltreatment during childhood on drug use frequency as well as problem drug use. Those with childhood-limited maltreatment were also more likely to endorse suicidal ideation and more symptoms of depression compared to those who were never maltreated. Individuals with experiences of maltreatment during adolescence reported greater levels of alcohol use, problem alcohol use, drug use, and problem drug use, along with a number of adverse outcomes (e.g., greater risky sexual behaviour, sexually transmitted disease diagnoses, suicidal ideation, and more likely to have been involved in violent crimes and incarcerations) compared to those with no history of maltreatment. Overall this study suggests that maltreatment is not only a pronounced risk factor but also a causal agent for long-term problems. Further, the impact of abusive experiences may differ depending on the developmental stage during which the incident takes place. For instance, maltreatment in childhood only may lead to more internalizing problems, while maltreatment during adolescence may increase risk for externalizing problems (Thornberry et al.). Because of the powerful detrimental impact of maltreatment on development, these findings emphasize the importance of developmentally appropriate services in order to improve long-term adjustment of child maltreatment survivors.

A large body of literature has focused on the relation between CSA and substance use (Wekerle & Wall, 2002), however there are discrepancies in the research in terms of which type of maltreatment actually has the greatest impact on later substance use. For example, a link consistently has been reported between CSA and substance use problems in women (e.g., Harrison, Fulkerson, & Beebe, 1997; Messman-Moore & Long, 2002; Mirotnick, 2014; White & Widom, 2008). More specifically, in a meta-analysis examining problem drinking, more severe CSA experiences were associated with

greater problematic alcohol use problems in women, while fewer studies found support for this association in men (Moncrieff & Farmer, 1998). Additionally, a history of CSA was found to be a significant risk factor for subsequent smoking, illicit drug use (i.e., cannabis, opioids, sedatives, stimulants, cocaine), illicit drug abuse and dependence, as well as earlier initiation of illicit drug use in large sample of men and women twins ($N = 6,050$; Nelson et al., 2006). Among high-school aged participants who had experienced a single type of abuse (i.e., only emotional, sexual, or physical abuse), sexual abuse was found to have the strongest association with increased use of tobacco, alcohol, and illicit drugs (e.g., marijuana, cocaine, barbituates, and heroin; Moran, Vuchinich, & Hall, 2004). Conversely, Arata et al. (2005) assessed the impact of different types of child maltreatment (i.e., CSA, CPA, CN, and CEA) using a sample of college students, and found that neglect was the only type of abuse that significantly predicted substance use. Further research is clearly needed in order to establish which type(s) of maltreatment are most strongly associated with subsequent struggles with drug and alcohol use.

Coping Strategies and Child Maltreatment

Coping theory. In addition to being at increased risk of developing eating disorders and substance use problems, survivors of child maltreatment may also struggle to cope adaptively in stressful situations, particularly due to earlier experiences of adversity (Gipple et al., 2006). Coping can be defined as cognitive and behavioural strategies used to manage stressful life events that may exceed individuals' personal resources (Lazarus & Folkman, 1984). It can be conceptualized as a process that changes over time, depending on the context and specific conditions of the situation. Individuals may use certain coping strategies to try to change their environment or use coping efforts to increase their understanding of a stressful encounter. Given the myriad of responses to stress, the coping literature often varies regarding the ways of categorizing different types of coping behaviour.

Lazarus and Folkman (1984), discussed two distinct coping dimensions. First, problem-focused coping is an effort to manage or change the source of the distress. Examples include: gathering

information, coming up with alternative solutions to the problem, as well as developing new skills and behaviours. Second, emotion-focused coping is an effort to regulate emotional reactions to the stressful event or to reduce feelings of distress. This consists of strategies such as selective attention, reappraising the situation, finding the positive in the negative event, self-blame, and minimization. Problem-focused coping strategies are generally more likely to be used when individuals believe they can do something to change the stressful situation, while emotion focused coping efforts often are used when individuals believe they cannot do anything to change it (Lazarus & Folkman). Endler and Parker (1990) found support for a third coping dimension: avoidance. This can include withdrawing oneself from the situation, seeking social support, and distraction. Of note is that the adaptiveness of each type of coping is based on the specific context of the stressful situation and both types are associated with potential costs and benefits.

Three dimensions of coping responses emerged across a diverse sample of individuals with a wide variety of stressors in a study by Amirkhan (1990): problem-solving, seeking social support, and avoidance. Problem-solving was compared to the primitive drive to “fight” when faced with danger and often is characterized by an attempt to manipulate the situation (e.g., brainstorming possible solutions, planning a course of action). Avoidance was compared to the “flight” response, and was described as an attempt to escape or withdraw (e.g., wanting to be left alone, avoiding others, daydreaming about better times). Social support seeking may stem from a human drive for contact or comfort in times of distress (e.g., seeking reassurance from someone close, getting advice from a friend, confiding in someone about one’s fears).

Additional types of coping have been identified by Carver, Scheier, and Weintraub (1989), who believed that Lazarus and Folkman’s (1984) two factor model was an oversimplification of a complex and diverse process. In their study on coping dimensions, Carver and colleagues examined fifteen conceptually distinct coping scales: active coping, planning, suppression of competing activities, restraint coping, seeking instrumental social support, seeking emotional social support, positive

reinterpretation, acceptance, denial, turning to religion, focus on and venting of emotions, denial, behavioural disengagement, mental disengagement, and alcohol-drug disengagement. Chosen strategies were found to vary depending on the situation and individuals' dispositions. It was noted that a particular coping style may not be inherently problematic but can become maladaptive if used over the long-term or in place of other more helpful strategies. Nonetheless, they emphasized that further research is needed in order to determine whether a given coping strategy is adaptive or maladaptive.

Researchers on coping have continued to seek ways to classify different coping approaches as either harmful or helpful (e.g., Skinner, Edge, Altman, & Sherwood, 2003; Thompson et al., 2010). Skinner and colleagues argued that three factors can help determine whether or not a coping strategy is healthy: developmental adaptiveness (e.g., frequently using coping strategies such as helplessness or social withdrawal may lead to developmental risk in the long-term), subjective experience (e.g., seeking social support from hostile individuals may lead to feeling socially isolated), and qualities of the coping style (e.g., organized, flexible, or productive versus disorganized, rigid, or derogatory). Previous researchers have thereby distinguished a number of types of maladaptive coping, including substance use, rumination, emotional numbing, and escape. Maladaptive coping patterns have been associated with a variety of adverse effects, including increased psychological distress, anxiety, and depression (Sarin et al., 2005). Conversely, coping styles that often are considered to be more adaptive, such as problem-solving and cognitive restructuring, have been linked to lower levels of distress and better physical health (Connor-Smith & Compas, 2004). In an attempt to increase understanding of the impact of adaptive versus maladaptive coping strategies on symptoms of depression, Thompson and colleagues (2010) assessed a sample of never-depressed adolescent girls, never-depressed adult women, and women with depression. Results suggested that among women with depression, using more maladaptive coping strategies (i.e., rumination) and less adaptive coping efforts (e.g., less problem-solving) was associated with greater severity of depression symptoms. Conversely,

among women who had no depression, the association between maladaptive coping (i.e., rumination) and symptoms of depression was weakened in the presence of adaptive coping strategies (e.g., problem-solving). Results underline how the relation between adaptive and maladaptive coping changes depending on individuals' current symptoms of depression and indicate that greater levels of adaptive coping may foster resilience. Resilience can be defined as the capacity to adapt and function well in spite of being exposed to adversity, stressful events, or trauma (Bonanno, Westphal, & Mancini, 2011).

Child maltreatment and coping. In order to explain the links between child maltreatment and subsequent emotional difficulties, previous researchers have examined the impact of factors such as coping (e.g., Milojevich, Levine, Cathcart, & Quas, 2018; Whiffen & MacIntosh, 2005). Although certain findings suggest that different types of abuse impact coping behaviour, a large part of the research on coping and child maltreatment has only investigated the effects of CSA (Gipple et al., 2006). For instance, a review by Spaccarelli (1994) discussed the impact of coping responses on psychological outcomes among CSA survivors. In particular, coping by avoiding or denying what happened was described as one of the riskiest coping responses among survivors, as this can lead to increased risk of psychological symptoms throughout the lifespan. Active coping strategies that have been associated with CSA survivors may consist of disclosing the abuse, seeking emotional support, and resisting the perpetrator (Spaccarelli). These strategies often are found to be more adaptive in the long run than strategies such as denial or detachment. Another coping strategy that frequently is associated with CSA survivors is emotional release, such as expressing anger about the experience (Spaccarelli). This form of coping may be a way to attain catharsis or gain insight (Spaccarelli). Along similar lines, Pennebaker and Seagal (1999) discuss the psychological benefits of expressing oneself, particularly in the form of structuring a painful experience into a narrative (e.g., writing about it). In this way, individuals can increase their understanding of a complex experience or of themselves. By giving meaning to a difficult event, it may become easier to manage emotions associated with the

stressful experience. Finally, cognitive restructuring, which entails changing one's perspective of a stressful experience or reframing abuse related cognitions, may lead to less distress over time (Spaccarelli). Overall, Spaccarelli suggested that the way in which CSA survivors cope with their experiences has an important impact on later symptomology and adjustment, and future researchers may wish to focus on which coping processes are particularly important in fostering resilience.

The relation between coping strategies, PTSD symptoms (e.g., emotional numbing, dysphoria), and social adjustment (e.g., parental role, work relations, role as a marital partner, etc.) among women survivors of early interpersonal trauma was explored in a study by Hassija, Garvert, and Cloitre, (2015). Interpersonal traumas mostly consisted of physical assault, CSA, CN, and adult sexual assault. Hassija and colleagues specifically assessed active, emotional support seeking, and behavioural disengagement coping strategies in a treatment seeking sample of 303 women survivors of childhood interpersonal assault. Results indicated that active coping techniques, such as trying to improve the situation, had an important positive impact on overall social adjustment as well as social and leisure activities, while emotional support seeking seemed to be most strongly associated with social activities only. Unexpectedly, behavioural disengagement was not found to impact the relation between symptoms of dysphoria (e.g., emotional detachment, irritability, and overall distress) and social functioning or adjustment. In turn, symptoms of dysphoria may be linked with other problematic behaviours, such as reduced seeking of social support, communication difficulties, and struggles with engaging in prosocial activities. Overall, this study provides evidence that approach oriented coping strategies (i.e., active coping and emotional support seeking) might have an important adaptive impact on social functioning and PTSD symptoms. Therapy that targets increasing coping skills may be especially helpful in improving survivors' ability to experience positive emotions, access to social support, and social skills. Ideally, this could help improve recovery among survivors and protect against distress in the future.

Previous studies often have found a link between experiences of childhood abuse and coping styles. For instance, in a study assessing women college students, Gipple and colleagues (2006) found links between three types of child maltreatment (i.e., CSA, CPA, and negative home environment) and coping strategies. In particular, they examined whether coping played a mediating or moderating role in the relation between abuse in childhood and symptoms of dissociation (e.g., not remembering certain experiences, depersonalization, derealisation), which often are a response to situations involving overwhelming stress. Coping strategies were categorized as problem-solving, seeking social support, and avoidance. More severe CSA experiences were associated with increased avoidance coping, and a more negative home environment was associated with less social support seeking and problem-solving coping strategies. Nonetheless, none of the coping styles assessed (i.e., avoidance, problem-solving, and seeking social support) were found to mediate between types of child maltreatment and dissociation. Support was found, however, for avoidance as a moderator in the relation between CPA and dissociation as well as the relation between negative home environment and dissociation. Thus, women college students who tend to use avoidant coping strategies and who endorsed CPA as well as negative home environments also reported greater levels of dissociation. In addition, when these women reported having a negative home environment and using social support seeking or problem-solving coping strategies, they experienced lower levels of dissociation. Although these findings were informative, the authors emphasized a need for future research examining how coping styles relate to experiences of child maltreatment.

Coping efforts among survivors of child maltreatment may have more of an impact on subsequent adjustment than the nature of the victimization experience itself. Indeed, Runtz and Schallow (1997) examined the role of social support and coping as mediators in the relation between child maltreatment (i.e., CSA and CPA) and psychological functioning in adulthood in a sample of 302 men and women university students. Based on the work of Burt and Katz (1987), which looked at coping among women survivors of sexual assault, Runtz and Schallow conceptualized coping

techniques as negative coping (e.g., avoidant and self-destructive strategies) or positive coping (e.g., expressing emotions or cognitive reprocessing coping tactics). It was predicted that negative coping would be associated with poorer adjustment while positive coping and social support would be associated with healthier adjustment. Strong support was found for the mediating role of social support and coping, and positive coping efforts were associated with healthier psychosocial functioning, while negative coping tactics were linked with impaired adjustment. Another process that has been found to impact adjustment following interpersonal victimization experiences is meaning-making (i.e., developing a meaningful understanding and making sense of the experience; Eadie, Runtz, & Godbout, 2008; Godbout & Runtz, 2009). In particular, dimensions of meaning-making such as maintaining a strong sense of identity that is not defined by the traumatic experience, not blaming oneself for the event, being able to move past the experience, and being able to trust others were found to be especially important in fostering recovery following interpersonal victimization (Eadie et al., 2008; Godbout & Runtz, 2009). Taken together, these findings emphasize the importance of examining the impact of coping strategies when investigating the long-term effects of child maltreatment on functioning. In particular, the types of coping strategies used by survivors of childhood trauma seems to have an important influence on whether or not they will continue to struggle with the aftermath of their abusive experiences throughout their lives.

In an effort to determine which factors increase resilience among CSA survivors, previous studies have investigated which types of coping efforts are linked to positive long-term adjustment (e.g., Wright et al., 2007). Wright et al. assessed a sample of 60 adult women CSA survivors recruited from the community and found that avoidant coping styles were associated with more symptoms of depression and that women who viewed their abuse as being unresolved tended to use more avoidant coping strategies compared to women who believed their abusive experiences were largely resolved. These findings add to previous research that suggests avoidance coping may be associated with poorer adjustment among child maltreatment survivors. While at the time of the abuse, it may have been

helpful to use avoidant strategies to protect themselves from being overwhelmed by events over which they had no control, continued use of avoidance tends to become less adaptive. Surprisingly inconsistent with the findings of Runtz and Schallow (1997), seeking social support and problem-solving were not found to be linked with any of the measures of adjustment (e.g., social isolation, symptoms of depression, physical health, marital satisfaction, and the degree to which they viewed their CSA experiences as being resolved; Wright et al.). The authors suggested that coping by problem solving and seeking social support may not have been associated with subsequent adjustment because the women found a way to resolve their abusive experiences that was not related to the coping strategies assessed in the study. Furthermore, in the Wright et al. study, social support referred to actively seeking the support of others instead of the availability of social support, which the authors proposed may also help explain the current findings. Nonetheless, due to discrepancies in the literature regarding which types of coping are associated with better outcomes, further investigation of how specific coping strategies relate to positive adjustment over time is critical.

Emotion Regulation and Child Maltreatment

Similar to types of coping, difficulties with emotion regulation have also been found to be linked with early experiences of maltreatment (Ehring & Quack, 2010). Building upon coping theory, research on emotion regulation has only gained popularity and attention more recently (Gross, 2015). While coping is primarily geared toward responding to a stressor and can be viewed as more of a long-term process (e.g., coping with grief over time around losing a loved one), emotion regulation describes the ways in which individuals try to influence which emotions they experience, when they experience them, and how they are experienced or expressed (Gross 2015; Gross, 1998). Emotion regulation is increasingly being studied in order to better understand the development, maintenance, and underlying function of different mental health related symptoms and problem behaviours (Gratz & Roemer, 2004). For example, difficulties with emotion regulation have been highlighted as a key factor in the development and symptomology of mental health diagnoses such as borderline personality disorder,

eating disorders, and substance use disorders (Fairburn, Cooper, & Shafran, 2003; Fox, Hong, & Sinha, 2008; Linehan, 1993; Treasure, Corfield, & Cardi, 2012). Furthermore, a history of child maltreatment has often been linked with the development of emotion regulation difficulties (Ehring & Quack, 2010; Fernando et al., 2014). Therefore, improving emotion regulation strategies may help prevent later difficulties stemming from experiences of maltreatment. However, despite its clinical importance, further research is needed on the role of emotion regulation difficulties in the development of long-term mental health related struggles (Gratz & Roemer, 2004).

There are a number of different emotion regulation strategies that have been identified (e.g., talking about one's emotions with others, distraction, self-harming, emotional avoidance, etc.; Kalokerinos, Erbas, Ceulemans, & Kuppens, 2019; Leahy, 2011). Two emotion regulation strategies that have been widely identified in the literature are cognitive reappraisal (i.e., changing the way a situation is interpreted in order to modify its emotional impact; Gross & John, 2003; Lazarus & Alfert, 1964) and expressive suppression (i.e., consciously inhibiting one's emotional response to an event (Gross, 1998). Research has found significant differences in psychosocial effects between these strategies (Kashdan, Barrios, Forsyth, & Steger, 2006). For instance, reappraisal has been found to be associated with a decrease in negative emotional experiences, while suppression has been found to be more cognitively taxing, and has been associated with greater levels of distress, greater levels of physiological activation, and decreased positive emotional experiences (Gross, 1998; John & Gross, 2004). In a longitudinal study by Ng, Huebner, Hills, and Valois (2018) examining the associations among emotion regulation strategies, stressful life events, and life satisfaction in a sample of adolescents, the use of more cognitive reappraisal and less expressive suppression was associated with greater levels of life satisfaction. In addition, greater use of expressive suppression was associated with lower life satisfaction. Similarly, in a study by Haga, Kraft, and Corby (2009) examining emotion regulation in a sample of undergraduates from the USA, Norway, and Australia, cognitive reappraisal

was associated with greater life satisfaction, greater positive affect, fewer symptoms of depression, and less negative affect. On the other hand, expressive suppression was associated with lower life satisfaction and positive affect, along with greater negative affect and symptoms of depression. Although these findings underline the impact of emotion regulation on overall well-being, future research is needed to understand more about the positive effects of emotion regulation on reducing mental health problems associated with difficult life events.

It is particularly important to further investigate the link between emotion regulation and child maltreatment, as improving emotion regulation strategies can help prevent later psychological difficulties resulting from abusive experiences. Research has often found a link between child maltreatment and emotion regulation difficulties (e.g., Ehring & Quack, 2010; Fernando et al., 2014; Messman-Moore & Bhuptani, 2017). As child maltreatment is a major risk factor for the development of different types of psychopathology, and emotion regulation might be a key factor that influences this link, it is crucial to further examine the associations among child maltreatment, emotion regulation, and different forms of psychopathology (Weissman et al., 2019).

Weissman and colleagues (2019) assessed whether difficulties with emotion regulation served as a mechanism that linked experiences of child maltreatment with the onset of psychopathology in a sample of youth. More severe child maltreatment experiences were associated with greater use of expressive suppression and rumination, as well as greater emotional reactivity (i.e., greater sensitivity, intensity, and duration of emotions). Child maltreatment was not found to be associated with cognitive reappraisal, which may suggest that children with experiences of maltreatment are not able to use this strategy as effectively as those with no experiences of maltreatment. In addition, typically less effective emotion regulation strategies were associated with greater severity of psychopathology symptoms, including symptoms of anxiety, depression, and PTSD, attention problems, aggressive behaviour, and rule-breaking behaviour.

Similarly, a study by Heleniak, Jenness, Vander Stoep, McCauley, and McLaughlin (2016) found that more frequent use of typically less effective emotion regulation strategies was associated with experiences of child maltreatment as well as more internalizing (e.g., depression, withdrawal, anxiety, somatic complaints) and externalizing (e.g., aggression, rule-breaking behaviour) symptoms in a community sample of adolescents. Along with the findings of Weissman and colleagues (2019), these results highlight the importance of focusing on improving emotion regulation strategies in order to help prevent or decrease mental health struggles among individuals with a history of maltreatment. However, additional research is needed to further examine these links, particularly in adults from the general population.

Coping and Substance Use

Another problematic way individuals may cope with and relieve stress is through substance use (i.e., drugs and alcohol; Klein, Elifson, & Sterk, 2003; Park & Levenson, 2002; Ullman, Relyea, Peter-Hagene, & Vasquez, 2013). Indeed, substance use frequently has been considered to be a maladaptive avoidant coping strategy (Holahan, Moos, Holahan, Cronkite, & Randall, 2001; Ullman et al., 2013). Researchers who focus on the impact of coping on substance use have found that more adaptive coping styles (e.g., problem-solving, seeking social support, cognitive reframing) are associated with lower substance use, while less functional coping efforts (e.g., avoidance) are linked to greater substance use (Fromme & Rivet, 1993; Hasking & Oei, 2004; McConnell et al., 2014). In McConnell and colleagues' study of 1,352 male and female adolescents from public schools across British Columbia, they found that adolescents who used more "engagement" coping strategies (e.g., problem-focused coping, task-oriented coping) reported less marijuana and tobacco use, and those who used more "disengagement" coping efforts (e.g., avoidance coping, emotion-focused coping) used more marijuana and tobacco. In addition, among the adolescents who reported they had never engaged in any substance use, increased engagement coping was associated with lower intention to try substances while increased disengagement coping was related to greater intention to try substances. This finding

regarding the risk of initiating substance use has powerful implications for prevention efforts, as strategies can be tailored to adolescents who are particularly vulnerable to later substance use even before they initiate.

In particular, the use of alcohol to cope with stress has been associated with greater consumption and increased alcohol related problems, especially in college students (Park & Levenson, 2002). Using a sample of 260 men and women undergraduate students, Park and Levenson investigated students' perceptions of their tendency to use alcohol to cope in general as well as to cope with stressful situations. A link was found between avoidance coping and drinking to cope. Results also indicated that drinking to cope was a common and problematic way of dealing with stress among students, as this type of coping was linked with heavier alcohol consumption, more frequent episodes of binge drinking, and more negative alcohol related consequences. Because heavy drinking can be dangerous and have negative long-term impacts on physical and mental health, further research on alcohol use as a coping behaviour is necessary to help reduce problem drinking, especially among college students.

The specific factors underlying the association between drinking to cope with distress and problematic alcohol use were explored by Holahan and colleagues (2001). This 10-year longitudinal study followed a randomly selected sample of 421 men and women. They assessed coping by asking participants about their use of a variety of avoidance coping strategies to deal with an important problem, and included drinking to cope as one of the avoidance coping tactics. Drinking to cope was found to predict alcohol consumption and problem drinking over the 10-year period of this study. Furthermore, the more individuals were prone to drink to cope at time 1, the stronger the link between emotional distress (i.e., depression and anxiety) and drinking behaviour (i.e., consumption and drinking related problems). In other words, the more individuals drank to cope, the more they were likely to consume alcohol and experience alcohol related problems (e.g., experiencing problems related to job, health, and legal trouble due to drinking too much). Moreover, drinking to cope seems to be a

powerful risk factor for the development of alcohol use disorders. Holahan et al.'s results suggest that one of the most reinforcing effects of alcohol is that it helps relieve emotional distress, particularly among those who tend to have poor coping skills. Findings from this study can be applied to theories linking stress and coping to alcohol use, such as the social learning model of alcohol use (Abrams & Niaura, 1987) and the tension-reduction model of alcohol use (Conger, 1956). According to the social learning model of alcohol use, drinking is used as a coping behaviour when other more adaptive coping strategies are not available (Abrams & Niaura, 1987). Furthermore, when individuals have positive expectancies regarding the effects alcohol use (e.g., reducing or regulating negative affect) they may be more likely to resort to alcohol use. The tension-reduction hypothesis of alcohol use (Buckner, Schmidt, Bobadilla, & Taylor, 2006; Conger, 1956; Han et al., 2015) was originally proposed by Conger as the idea that alcohol provides relief from stress as well as other negative emotions, and individuals who use this coping strategy drink more when exposed to stressful situations. Given these theories, as well as Holahan et al.'s findings, both stress management and alcohol treatment programs might benefit by incorporating coping-based interventions and increasing clients' repertoire of coping options.

In a more recent study, Read and colleagues (2012) examined trauma exposure and symptoms of posttraumatic stress as risk factors for substance use problems (i.e., alcohol and drugs) in first year college students. Results indicated that having PTSD symptoms at the start of college was associated with an increased risk for alcohol and drug related problems (e.g., impaired driving, sexually transmitted infections, aggressive behaviour). This suggests that during this transition period, which can be characterized by increased vulnerability and instability, trauma exposure and PTSD symptoms are powerful risk factors for negative substance related consequences. Of note is that consistent with self-medication theory, PTSD symptoms had a stronger effect on problem substance use than experiencing a traumatic event alone, implying that students are turning to substances in order to cope

with psychological distress. This study highlights the need for early intervention, particularly during this important developmental period, in order to offset risk throughout the college years and beyond.

Although the majority of studies exploring the links between substance use and coping mechanisms have focused on problematic alcohol use, a substantial body of research also has looked at using drugs to cope. For instance, in a sample of women who reported recent use of illicit drugs, more adaptive coping skills were associated with decreased drug use (Klein et al., 2003). More specifically, women who reported that they would be inclined to use drugs on days they knew would be stressful endorsed greater drug use than women who reported they would not have the urge to use drugs to cope with a stressful day. These results are consistent with other work that indicated that deficits in coping skills are linked with increased drug use (e.g., El-Bassel, et al., 1996; Grunbaum, Tortolero, Weller, & Gingiss, 2000). Taken together, empirical findings suggest that improving coping tactics could play a significant role in reducing harmful substance use. Moreover, further investigation of the use of illicit drugs and alcohol to cope with stressors would make an important contribution to the literature on substance use treatment strategies.

Emotion Regulation and Substance Use

Links have also been found between emotion regulation and substance use (Blair et al., 2018; Fox et al., 2007). For instance, a study by Fox, Hong, and Sinha (2008) investigated the effects of emotion regulation among individuals with alcohol use disorders. Overall, participants with alcohol use disorders reported more problems with emotion regulation (e.g., less awareness of emotional states and impulse control) compared to individuals who were social drinkers. Following inpatient treatment, however, those with alcohol use disorders improved significantly in emotional awareness (e.g., paying attention to how they are feeling; Gratz & Roemer, 2004) as well as emotional clarity (e.g., knowing how they are feeling, making sense of their emotions), but problems with impulse control remained unchanged.

In a similar study assessing difficulties with emotion regulation in a sample of inpatients with cocaine use disorder, Fox and colleagues (2007) found that compared to a group of healthy controls, those with cocaine addictions were less able to identify and understand how they were feeling emotionally. Furthermore, the cocaine addicted group reported more limited access to using effective emotion regulation strategies compared to the control group (e.g., believing there is nothing they can do to make themselves feel better when upset) and they were more likely to struggle with impulse control during a stressful experience. When they were discharged from treatment, the cocaine-addicted group displayed significant improvements in emotion regulation, such as better emotional clarity, greater capacity to use effective strategies to regulate their emotion, and improved ability to engage in goal-directed behaviours under stressful conditions. However, at discharge the cocaine group did not show significant improvement in emotional awareness and acceptance (e.g., judging themselves or reacting negatively when feeling upset). In addition, similar to inpatients undergoing treatment for alcohol use disorder (Fox et al., 2008), problems with impulse control had not significantly improved at discharge. As low impulse control might increase the likelihood of relapse, findings from these two studies by Fox and colleague (2007; 2008) support the importance of focusing on improving emotion regulation skills, particularly impulse control, in order to help with long-term recovery.

Adding to this growing body of research, Magar, Phillips, and Hosie (2008) examined emotion regulation and risk-taking behaviour in a sample of undergraduate students. Results indicated that smokers used less cognitive reappraisal than non-smokers, the use of cognitive reappraisal was related to an older age of first cigarette use, and the use of expressive suppression was associated with a younger age of first cigarette use. In addition, results showed that greater use of cognitive reappraisal predicted less involvement in problem behaviours during excessive alcohol use (e.g., getting taken to the hospital, getting into a fight, getting in trouble with the police, etc.). Findings emphasize the idea that further research on emotion regulation could help increase our understanding of underlying causes

of risky behaviours such as substance use, and future studies using a more heterogeneous sample are needed.

Coping and Eating Disorders

In addition to support for an association between increased substance use and poorer coping skills (McConnell et al., 2014), there is a growing body of research on the relation between disturbed eating behaviours and dysfunctional coping styles (e.g., VanBoven & Espelage, 2006; Villa et al., 2009). For instance, studies often have found a link between avoidance coping and eating disturbances (e.g., Ghaderi & Scott, 2000; VanBoven & Espelage, 2006). Indeed, VanBoven and Espelage found support for a link between avoidant coping strategies and increased eating disorder symptoms in a sample of college women. Women with eating disorder symptoms also tended to have lower confidence in their abilities to use problem-solving coping strategies during stressful situations.

The increased use of avoidance coping tactics among individuals with eating disorders can be explained using escape theory (Heatherton & Baumeister, 1991). In particular, escape theory has been used to account for binge eating behaviour (i.e., disinhibited overeating that may occur in the context of chronic dietary restraint or bulimia). Heatherton and Baumeister argue that binge eating arises out of a desire to escape the burden of self-awareness, particularly with respect to unattainable beauty ideals and self-control goals. In order to escape unpleasant affect (e.g., feelings of depression, anxiety, unhappiness, etc.) associated with failing to live up to impossibly high expectations of themselves, individuals with symptoms of binge eating disorder may become disinhibited and focus more on the immediate present and on their physical sensations (e.g., the way food tastes good and makes them feel better) as opposed to long-term consequences (e.g., potential weight gain following a binge). Eating may thereby temporarily relieve negative affect or help individuals forget their distress. Moreover, escape strategies have been tied to other types of avoidant coping strategies that also tend to be used by individuals with disordered eating, such as substance use, sexual promiscuity, self-harming behaviour, and suicidality (Heatherton & Baumeister).

In order to increase understanding of the impact of coping in the development and maintenance of eating disorders, Ghaderi and Scott (2000) compared five groups of women using a large sample of from the general population of Sweden ($N = 1,157$). Groups included: women with previous eating disorder diagnoses (e.g., anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified), women with current eating disorders, women with no eating disorder but with past history of dieting, women with no eating disorder but current dieting, and women with no eating disorder or history of dieting. Women with eating disorders (both past and current) used less adaptive coping strategies (e.g., less problem-solving and less social support seeking) compared to women who had dieted but had no eating disorder diagnoses as well as the control group. Similar to previous findings, those who had ever had an eating disorder also tended to use more escape avoidance coping strategies compared to the dieting group or the control group. The authors argued that increased avoidant coping strategies among the eating disorder groups may be due to having impossible goals related to controlling weight and body image, and due to the biological rebound-effects of dieting, binge eating, purging, and starvation (which can make goals even less attainable). Overall, results suggested that healthier eating behaviour (e.g., having a balanced diet, no starvation, no bingeing, no purging, etc.) was linked with healthier coping efforts, which could have an important influence on eating disorder prevention and treatment strategies.

Despite the empirical support for increased avoidant coping tactics among individuals with eating disorders, there are still inconsistencies in the research in terms of which problematic coping styles women with eating disorders are more likely to use (Nagata, Matsuyama, Kiriike, Iketani, & Oshima, 2000). For instance, in a study by Villa and colleagues (2009) using a sample of 87 women (divided into 3 groups: those with anorexia nervosa, bulimia nervosa, and no eating disorder), results showed that women with eating disorder diagnoses adopted less adaptive coping tactics compared to the control group with no eating disorders. Indeed, findings indicated that women with eating disorders feel less confident in their capacities to deal with stressful events, they are less likely to seek the

support of others, and they are more likely to struggle with accepting negative events or constructively reframing them. However, unlike other studies, women with eating disorders reported using less avoidance coping than the healthy control group. One proposed explanation for this unexpected finding is that the eating disorder itself may become a way to cope with stress, and may replace avoidant coping strategies that were previously being used (Villa et al.). The authors argued that as patients become more confident in using their eating disorder as a way to cope, they rely less and less on other avoidant coping techniques. Nonetheless, this study adds to empirical findings that individuals with eating disorders tend to use less adaptive coping efforts and emphasizes the therapeutic importance of focusing on learning healthier coping skills in order to decrease symptoms and features of eating disorders (e.g., body dissatisfaction, drive for thinness, bingeing, purging). Future research is needed, however, in order to establish which coping tactics most impact the relation between coping with stressful situations and disordered eating.

Emotion Regulation and Eating Disorders

The impact of emotion regulation skills on eating disorders has also gained research interest in more recent years (Svaldi, Griepenstroh, Tuschen-Caffier, & Ehring, 2012). Studies on eating disorders have found that difficulties with emotion regulation are a major risk factor for transdiagnostic features across the different eating disorders (i.e., maintaining factors that are common across a range of different eating disorder diagnoses; Fairburn, Cooper, & Shafran, 2003; Treasure, Corfield, & Cardi, 2012). A study by Brockmeyer and colleagues (2014) examined difficulties with emotion regulation in a sample of women eating disorder patients (e.g., anorexia nervosa, bulimia nervosa, binge eating disorder) compared to a group of normal-weight healthy controls and a group of over-weight healthy controls. Results indicated that patients with anorexia nervosa and bulimia nervosa showed greater overall difficulties with emotion regulation than the normal-weight healthy control group, as well as higher scores on specific emotion regulation subscales including difficulties accepting their emotional reactions, a lack of emotional awareness, less emotional clarity, struggles using goal-directed behavior,

difficulties with impulse control, and struggles using effective emotion regulation strategies to manage stressors. Compared to the over-weight healthy controls, patients with binge eating disorder also showed greater overall difficulties with emotion regulation, and higher scores on specific emotion regulation subscales including difficulties accepting their emotional responses, a lack of emotional awareness, less emotional clarity, problems using goal-directed behavior, limited impulse control, and struggles using effective emotion regulation strategies to manage stressors. Although these findings add to the growing body of research emphasizing the importance of difficulties with emotion regulation in individuals with eating disorders, further studies are needed to continue examining specific emotion regulation difficulties among different types of eating disorders using a non-clinical sample.

In an effort to uncover the underlying processes that explain and maintain eating disorders, Fairburn and colleagues (2003) proposed that some patients struggle with mood intolerance (i.e., difficulties coping effectively with heightened emotions) that maintains the eating disorder and impedes recovery. In particular, they suggested that certain eating disorder patients struggle with a variety of intense emotional states, including more difficult emotions (e.g., anger, anxiety, sadness, etc.) as well as more positive emotions (e.g., excitement). These individuals struggle to accept and cope effectively with intense changes in their emotional states or moods, and instead they use less functional emotion regulation strategies that reduce their emotional awareness and/or numb or neutralize their emotional state, including self-harming, the use of substances, as well as eating disorder behaviours (e.g., binge eating, purging, over exercising, etc.). Over time, their eating disorder behaviours may become a pattern they use on a regular basis in an attempt to regulate their emotions.

The association between various emotion regulation strategies and different types of eating disorders was examined in a study by Svaldi and colleagues (2012). They investigated a sample of women with anorexia nervosa, bulimia nervosa, binge eating disorder, borderline personality disorder, major depressive disorder, and healthy controls. Findings revealed that compared to healthy controls, participants with eating disorders reported greater intensity of emotions, more emotion regulation

problems (e.g., struggles using goal-directed behavior, difficulties with impulse control, and having limited access to effective emotion regulation strategies), and more frequent use of typically less effective coping strategies (e.g., expressive suppression), as well as less emotional acceptance, awareness, and clarity, and less use of typically more effective coping strategies (e.g., less use of cognitive reappraisal). They also reported that increased severity of eating disorder symptoms was associated with greater emotion regulation difficulties across most emotion regulation variables (e.g., less use of cognitive reappraisal, more expressive suppression, etc.). They found no significant differences between the different types of eating disorders and the emotion regulation variables, with the exception of participants with binge eating disorder (i.e., those with binge eating disorder showed a greater ability to accept difficult situations than those with anorexia nervosa, and greater clarity of emotion than the bulimia nervosa group, etc.). Overall, results suggested that the different types of eating disorders are associated with similar profiles of emotion regulation difficulties, besides binge eating disorder, which appears to be associated with relatively fewer emotion regulation problems (Svaldi et al.). The results of this study add important support to the theory that difficulties with emotion regulation are a transdiagnostic risk and maintaining factor across different types of eating disorders (other than binge eating disorder). However, additional research is essential to investigate the link between emotion regulation and symptoms of eating disorder in order to further elucidate these relations, particularly among women from the general population to see if community samples will show similar patterns to clinical samples. Results also suggest that incorporating learning adaptive emotion regulation skills in therapy for individuals with eating disorders could be of major benefit.

Eating Disorders and Substance Use

Individuals with eating disorders may also be at greater risk of problematic substance use. As mentioned previously, eating disorders and problematic substance use often co-occur (American Psychiatric Association, 2013; Bahji et al., 2019; Fouladi et al., 2015; Harrop & Marlatt, 2010). For example, in a nationally representative sample of Canadian women, risk for an eating disorder was

associated with increased use of illicit drugs (e.g., cocaine/crack, amphetamine, ecstasy, hallucinogens, LSD, cannabis, and heroin), illicit drug dependence and interference, as well as alcohol dependence and interference (Gadalla & Piran, 2007). Drug and alcohol related interferences refer to the impact of substance use on individuals' responsibilities, daily routines, occupational or academic functioning, social lives, and close relationships (Gadalla & Piran). A study by Fouladi and colleagues (2015) assessed substance use (i.e., alcohol, stimulants, sedatives, marijuana, hallucinogens, opiates, cocaine/crack, phenylcyclidine, inhalants, and caffeine pills) in individuals who met diagnostic criteria for anorexia nervosa, bulimia nervosa, binge eating disorder, purging disorder, and eating disorder not otherwise specified using a sample of mostly women patients presenting for appointments at different eating disorder treatment centres ($N = 2,633$; 94.2% women). Findings indicated that those with bulimia nervosa consumed the most alcohol compared to the other diagnostic categories of eating disorders (i.e., anorexia nervosa, binge eating disorder, and eating disorder not otherwise specified). Those with bulimia nervosa and anorexia nervosa-binge eating/purging type reported more frequent substance use than those with anorexia nervosa-restricting type, eating disorder not otherwise specified, and binge eating disorder. This may indicate that the presence of binge eating and purging in clients with eating disorders increases risk of substance use, and is consistent with studies that have reported a higher rate of substance use in women with bulimia nervosa and anorexia nervosa-binge eating/purging type than those with anorexia nervosa-restricting type (e.g., Stock, Goldberg, Corbett, & Katzman, 2002). In the Fouladi et al. study, clients with anorexia nervosa-restricting type reported the least alcohol and other substance use compared to clients with any other eating disorders, which may be explained by the idea that anorexia nervosa-restricting type is associated with avoidant and obsessional behaviour that might lead to restricting not only food but also alcohol and other drug use (Harrop & Marlatt, 2010). Marijuana was found to be the most frequently used illicit drug and individuals with bulimia nervosa and purging disorder reported the greatest marijuana use (Fouladi et al.). Taken together, these results suggest that individuals with eating disorders who binge and purge are at greater

risk of problem substance use compared to individuals with eating disorders that do not involve binge eating and purging (Fouladi et al.).

The literature on eating and substance use disorders is variable in terms of theoretical explanations for the links between eating disorders and substance use problems. Proposed common etiologies include shared genetic vulnerabilities, neurobiological factors (e.g., hypothalamic–pituitary–adrenal axis activity; Vaz-Leal et al., 2015), behavioural, personality, and emotional factors (e.g., impulsivity, emotional dysregulation, depression; Harrop & Marlatt, 2010) as well as social and cultural risk factors (e.g., pressure to fit in or using substances to achieve the thinness ideal; Carbaugh, & Sias, 2010). Despite the parallels between the symptoms and development of eating and substance use disorders, however, research points to distinctions in genetic, neurobiological, and personality factors (Harrop & Marlatt). More recently, a small body of research has begun to examine the role of coping style in the association between substance use and eating disorders (Khaylis et al., 2009). Although separate studies have found support for a link between dysfunctional coping styles (e.g., avoidance) and increased substance use (e.g., McConnell et al., 2014; Park & Levenson, 2002), as well as a link between dysfunctional coping styles and disturbed eating behaviours (e.g., Ghaderi & Scott, 2000; VanBoven & Espelage, 2006), fewer studies have examined the connections between all three variables together. Nonetheless, a study by Khaylis and colleagues assessed binge drinking in college women who were at high risk for developing an eating disorder (based on responses to The Weight Concerns Scale; Killen et al., 1994). Findings from the Khaylis study revealed that avoidance coping and using substances as a means of coping were both related to increased levels of binge drinking among women at risk for eating disorders. Similar results were reported by Luce and colleagues (2007) in a study that investigated alcohol use and drinking motives in a university sample of women divided into four eating disorder groups: bulimia nervosa purging subtype, binge eating disorder, eating disorder not otherwise specified, and a non-eating disordered control group. Results showed that women in the binge eating disorder group reported more binge drinking compared to those in the eating

disorder not otherwise specified group and the control group. Furthermore, women in the bulimia nervosa purging subtype group and the binge eating disorder group were more likely than the eating disorder not otherwise specified group and the control group to report coping with stress as a motive for drinking (i.e., drinking alcohol to avoid, escape, or regulate negative affect). Taken together, Khaylis et al. and Luce et al.'s findings suggest that using alcohol to cope with aversive emotions may account for the link between eating disorders and alcohol use disorders. Nonetheless, future studies are needed in order to explore the role of coping in the relation between other types of eating disorders (e.g., anorexia nervosa) and related symptoms, as well as other types of substance use (e.g., marijuana, illicit drugs).

Summary

In summary, child maltreatment is a pervasive social problem that is associated with numerous adverse outcomes across the lifespan (Gilbert et al., 2009; Milojevich et al., 2018; Turner et al., 2006). For instance, researchers have consistently reported links between child maltreatment and disturbed eating behaviours (e.g., Burns et al., 2012; Johnson et al., 2002; Romans et al., 2001) as well as substance use problems (e.g., Brems et al., 2004; Herrenkohl et al., 2013; Lo et al., 2008; Thornberry et al., 2010), but theories differ regarding the underlying factors that influence these relations. Certain factors that may increase our understanding of these associations are coping and emotion regulation strategies that are used to manage stressful experiences. Indeed, links have been found between difficulties with coping adaptively and using effective emotion regulation strategies in times of stress and (a) a history of child maltreatment (e.g., Ehring & Quack, 2010; Fernando et al., 2014; Gipple et al., 2006; Milojevich et al., 2018), (b) greater levels of substance use and related problems (e.g., Blair et al., 2018; Klein et al., 2003; McConnell et al., 2014; Park & Levenson, 2002), and (c) increased risk for eating disorders and related symptoms (Brockmeyer et al., 2014; VanBoven & Espelage, 2006; Villa et al., 2009). However, no study to date seems to have simultaneously explored the role of coping and emotion regulation in the associations among child maltreatment (i.e., CSA, CPA, CEA, and CN),

eating disorder symptoms, and problem substance use. Further research is nonetheless essential, as all of these factors are associated with significant mental and physical health impairments, and a better understanding of these associations can help health care providers to more effectively meet the needs of survivors.

Common Limitations of the Research

Although there is a large body of research in the areas of child maltreatment, eating disorders, problem substance use, coping behaviour, and emotion regulation, there are a number of important limitations that are common to many of the studies that have been reviewed here. To begin, studies that use retrospective self-report measures are subject to recall bias, which may in turn lead to distorted responses from participants (Burns et al., 2012; Nelson et al., 2006). For instance, recollections of abusive experiences in childhood may not be accurate representations of reality (e.g., due to elapsed time or potential distortions caused by substance abuse; Feerick, Haugaard, & Hien, 2002). Nonetheless, previous research indicates that recall of abusive events in adulthood is generally accurate and reliable (Dube, Williamson, Thompson, Felitti, & Anda, 2004), and retrospective measures of abuse provide valuable information about the long-term impact of child maltreatment (e.g., they may provide information about cases of abuse that were not identified by prospective designs, including chronic and more severe cases of abuse for which protective services did not intervene; Kendall-Tackett & Becker-Blease, 2004).

Furthermore, studies may have oversimplified the complexity of child maltreatment experiences and disordered eating, which may lead to underestimating the associated risks (e.g., Nelson et al., 2006). More specifically, certain research papers used only dichotomous variables of child maltreatment (e.g., presence or absence) and did not differentiate between different types of abuse or characteristics of the abuse, which can have an important impact on subsequent development (e.g., perpetrator, age at which abuse occurred, severity, frequency, etc.; e.g., Evans et al., 2013; Herrenkohl et al., 2013; Kearney-Cooke & Striegel-Moore, 1994; Nelson et al., 2006). Similarly, features of eating

disorder symptoms (e.g., symptom severity) were not always examined (e.g., Romans et al., 2001).

Future research considering the unique impact of multiple types of abuse and eating disorder symptoms on a continuum (i.e., instead of only assessing specific diagnoses) is needed in order to increase understanding of the impact of these variables throughout the lifespan (Arata et al., 2005; Burns et al., 2012).

In addition, a number of the studies described involved non-random or homogeneous samples, which are not representative of the general population (e.g., Burns et al., 2012; Gipple et al., 2006). These include samples of undergraduate students (Burns et al., 2012; Gipple et al., 2006) as well as high-risk or clinical samples (e.g., Brems et al., 2004; Brockmeyer et al., 2014; Fox et al., 2007; Hassija et al., 2015; Villa et al., 2009). Results were also sometimes limited by small numbers of participants with eating disorders (e.g., Romans et al., 2001) or child maltreatment (e.g., Dittrich et al., 2018; Fleming, Mullen, Sibthorpe, Attewell, & Bammer, 1998).

Importantly, studies that compare healthy versus unhealthy coping styles and emotion regulation strategies may have used contextually and socially driven definitions that can vary between cultures (Chun, Moos, & Cronkite, 2006; Gipple et al., 2006; Haga et al., 2009). For instance, while individualistic cultures may tend to emphasize coping tactics that confront and change external stressors (e.g., problem-solving coping), collectivist cultures may be more likely to use tactics that avoid external stressors and instead focus on changing their internal emotional states (e.g., avoidance coping; Chun et al., 2006). Although it would be impossible to tease apart coping and emotion regulation tactics from influences such as race, ethnicity, and culture (Gipple et al., 2006), results should be interpreted while taking these factors into account.

Findings may also be inaccurate because of under-reporting of potentially painful personal details, such as child maltreatment experiences, disordered eating behaviour and attitudes, or problematic substance use among participants. In order to reduce the subjectivity of participants' responses, it might be useful for future studies to include measures of child maltreatment, eating

disorder symptoms, and substance use that use behaviourally descriptive language instead of emotionally charged terms or labels (e.g., asking about how often participants have eaten unusually large amounts of food instead of asking how often participants binge eat or asking about the nature of an unwanted sexual experience instead of only asking if they have ever been raped; Kubany et al., 2000). Nonetheless, it would be impossible to eliminate all subjectivity from self-report measures, and individuals' subjective experiences and perspectives should be taken into account when interpreting findings. Finally, causality could not generally be established between the variables (e.g., between aversive experiences in childhood and negative sequelae across the lifespan or between eating disorder features and poor coping styles) in the studies that used cross-sectional designs as opposed to longitudinal models (Burns et al., 2012; Villa et al., 2009). Despite this limitation, cross-sectional designs are still a useful and efficient way to identify preliminary links between these variables that can subsequently be examined more rigorously using longitudinal designs (Mann, 2003). Another advantage of cross-sectional research is that the effects of time-of-measurement (i.e., effects of historical events or cultural trends occurring during data collection) are constant among all participants compared to longitudinal designs in which participants are tested at multiple different times (Anstey & Hofer, 2004).

My study addresses some of the limitations in the existing research by using a non-dichotomous measure for child maltreatment and by specifically looking at different forms of maltreatment. Regarding eating disorders, I looked at different types of eating disorder symptom features and their levels of severity. I also used a sample from the general population instead of assessing only undergraduate students or other more homogeneous samples. In addition, I collected my data using online psychology research websites and a crowdsourcing site. Because participants' responses were all anonymous, this may have helped reduce under-reporting of potentially painful personal details, such as child maltreatment experiences, disordered eating behaviour and attitudes, or problematic substance use among participants.

Objectives of the Current Study

The main objective of the present study is to examine the links among child maltreatment (i.e., CSA, CPA, CEA, and CN), coping strategies, emotion regulation, eating disorder symptoms, and problem substance use (i.e., drugs and alcohol) in women from the general public. This study looked at these variables in women only, as there are significant differences reported between both genders in terms of eating disorder diagnoses, symptoms, and prevalence rates (Striegel-Moore et al., 2009; Woodside & Kennedy, 1995). In addition, since there are a number of intersecting high-level risk factors for eating disorders that are unique to women, such as sociocultural effects, drive for thinness, and body dissatisfaction, examining men is beyond the scope of this project (Piran, 2010; Tylka, 2004).

As previously discussed, consistent support has been found for a link between child maltreatment and eating disorder diagnoses and symptoms (e.g., Burns et al., 2012; Johnson et al., 2002; Romans et al., 2001) as well as child maltreatment and problematic substance use (e.g., Brems et al., 2004; Herrenkohl et al., 2013; Lo et al., 2008; Thornberry et al., 2010). In addition, researchers suggest that survivors of victimization in childhood may tend to use less adaptive coping tactics and emotion regulation strategies when confronted with negative life events or stressful situations, especially avoidance coping and expressive suppression (e.g., Gipple et al., 2006; Milojevich et al., 2018; Weissman et al., 2019; Wright et al., 2007). In turn, dysfunctional coping behaviour and emotion regulation have been linked to increased substance use and related problems (e.g., Blair et al., 2018; McConnell et al., 2014; Park & Levenson, 2002), as well as to disturbed eating behaviours and attitudes (e.g., Brockmeyer et al., 2014; Ghaderi & Scott, 2000; VanBoven & Espelage, 2006). Although a number of studies have separately investigated the impact of coping styles on substance use and on eating disorder symptoms, findings from a small body of research examining coping, substance use, and eating disorders together suggest that using substances to cope with negative affect may account for the high co-occurrence of symptoms of eating disorders and substance use disorders (Khaylis et al., 2009; Luce et al., 2007).

To my knowledge, although there is a significant body of research investigating the long-term adverse consequences of child maltreatment, no other studies have explicitly considered the combined effects of maladaptive coping strategies, emotion regulation, substance use, and eating disorder symptoms in women survivors of child maltreatment. In addition, most of the research on child maltreatment and its associated adverse consequences has focused solely on CSA (e.g., Evans et al., 2013; Gipple et al., 2006; Wekerle & Wall, 2002). Because of the paucity of studies incorporating multiple types of maltreatment, the current study included CPA, CEA, CN, and CSA. Furthermore, the literature is inconsistent about the impact of each form of abuse on different psychological outcomes (e.g., Arata et al., 2005; Johnson et al., 2002; Moran et al., 2004). Research also is lacking on the specific underlying factors that influence the connection between child maltreatment and subsequent problems with coping, emotion regulation, substance use, and eating behaviour across the lifespan. The present project addresses these gaps.

A careful review of the literature revealed that no studies to date seem to have explicitly examined coping and emotion regulation as moderators of the relation between experiences of child maltreatment and subsequent struggles with substance use and eating disorder symptoms. However, support has been found for the moderating (but not mediating) role of coping in the links between other factors, such as personality traits and emotional distress (Connor-Smith & Compas, 2002) as well as trauma exposure (including child maltreatment) and trauma symptoms (e.g., feeling scared, avoiding reminders of the stressful event; Elzy, Clark, Dollard, & Hummer, 2013). Support has also been found for emotion regulation as a moderator in the relation between victimization experiences (e.g., exposure to violence, such as being hit by someone or being shot) and showing a biological stress response (e.g., cortisol output; Kliever, 2016). Emotion regulation has also been found to be a moderator in the relation between negative life events (e.g., parental divorce, death of a family member) and psychological distress (e.g., difficulties such as losing sleep due to worry, being unable to concentrate, feeling unhappy or depressed, etc.; Boyes, Hasking, & Martin, 2016). Examining emotion regulation

and coping as moderators in the relation between adverse experiences (such as child maltreatment) and poorer psychological outcomes is crucial, as this will help to design effective intervention strategies among vulnerable populations (Boyes et al.).

The following addresses why I looked at moderation and not mediation in my study. Of note is that this is not to say mediation is not operating whatsoever, however the mediating role of coping and emotion regulation was not the focus of the current study. First, the links between a history of child maltreatment with coping and emotion regulation skills are complex. While experiencing child maltreatment may impact coping and emotion regulation tactics used to manage stressful situations, coping and emotion regulation also are affected by a variety of other factors. These include the demands of the situation, available resources, environmental limitations, cognitive biases (e.g., heightened memory for negative experiences), and cognitive deficits (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Joormann & Quinn, 2014). This means that multiple factors may account for the links between child maltreatment and subsequent struggles with eating or substance use disorder symptoms. Accordingly, this study did not focus on determining whether the links between child maltreatment and subsequent struggles with eating or substance use disorder symptoms are *explained* primarily by the use of maladaptive coping tactics and emotion regulation strategies (i.e., coping and emotion regulation as mediators of this link). Instead, this study examined whether coping and emotion regulation *impact* the association between child maltreatment and problem substance use/eating disorder symptoms. In particular using a moderation analysis, I was able to examine whether the severity of substance use problems and eating disorder symptoms are determined by the interaction between coping/emotion regulation strategies and a history of child maltreatment (i.e., coping and emotion regulation as moderators of this link). That is, this study assessed whether strong links between child maltreatment and symptoms of eating disorders or problem substance use exist only for child maltreatment survivors who tend to use typically maladaptive or ineffective coping tactics and emotion regulation strategies. This study also assessed whether the relation between child

maltreatment and problem substance use/eating disorder symptoms is weaker when more typically adaptive coping or emotion regulation strategies are used. Since previous findings indicate that coping efforts and emotion regulation may also play a role in the links between eating disorders and substance use disorders (Khaylis et al., 2009; Luce et al., 2007), this study examined whether coping and emotion regulation moderate the association between eating disorder symptoms and problem substance use. By investigating the moderating role of coping and emotion regulation, researchers can clarify whether adaptive coping and emotion regulation serve as protective factors in the relation between early victimization experiences and maladaptive functioning in adulthood as well as between symptoms of eating disorders and problematic substance use (Elzy et al., 2013). In turn, it is crucial to understand the factors that help increase resilience among survivors of child maltreatment, and individuals who struggle with eating disorders and/or problematic substance use. Interventions targeting positive coping and emotion regulation techniques can thereby be tailored to the specific needs of each individual in order to reduce the negative sequelae of these potentially extensively damaging experiences.

Hypotheses

Specific hypotheses of the current study include:

1. Women with a history of child maltreatment (i.e., CSA, CPA, CEA, and CN) will be more likely to have symptoms of eating disorders (i.e., more dieting, bulimia and food preoccupation, and oral control) than women without a history of child maltreatment.
2. Women with a history of child maltreatment will engage in greater levels of problematic substance use (i.e., drugs and alcohol) than women without a history of child maltreatment.
3. Women with a history of child maltreatment will use typically less effective coping strategies (i.e., more avoidance, less problem-solving, and less seeking social support) than women without a history of child maltreatment.

4. Women with a history of child maltreatment will use typically less effective emotion regulation skills (i.e., less cognitive reappraisal and more expressive suppression) than women without a history of child maltreatment.
5. Women who use coping strategies that are typically less effective (e.g., more avoidance) will engage in greater levels of substance use than women with more adaptive coping skills (i.e., more problem-solving and more seeking social support).
6. Women who use emotion regulation strategies that are typically less effective (e.g., more expressive suppression) will engage in greater levels of substance use than women with more adaptive emotion regulation skills (i.e., more cognitive reappraisal).
7. Women who use typically less effective coping strategies will be more likely to have symptoms of eating disorders than women with more adaptive coping skills.
8. Women who use emotion regulation strategies that are typically less effective (e.g., more expressive suppression) will be more likely to have symptoms of eating disorders than women with more adaptive emotion regulation skills (i.e., more cognitive reappraisal).
9. Coping style and emotion regulation strategies will moderate the associations between:
 - a. Child maltreatment and eating disorder symptoms,
 - b. Child maltreatment and problem substance use, and
 - c. Eating disorder symptoms and problem substance use.

Method

Participants

After getting approval from the Human Research Ethics Board at the University of Victoria, a sample of 413 women 19 years of age or older were recruited to participate in this study from May 2017 to September 2017. Participants consisted of women from the general population who were recruited through announcements on a website used for online surveys as well as psychology research websites. In order to participate, women were required to be 19 years of age or older.

Procedure

The announcement for this study was listed on the following online psychology research websites: <https://www.socialpsychology.org>, <https://psych.hanover.edu/research/exponnet.html>, www.in-mind.org, www.onlinepsychresearch.co.uk. I also ran my survey on CrowdFlower (i.e., www.crowdflower.com), which is a platform for accessing services and information from a large online community that can be used to conduct online surveys. Participants were informed of how long the study would take to complete (i.e., approximately 30 to 45 minutes) and that it was designed to improve understanding of “the links between various life experiences, including adverse childhood experiences such as child maltreatment, and well-being in adulthood, including substance use and eating behaviours”. Before beginning the questionnaires, participants were asked to read an online informed consent form (see Appendix A) detailing the associated benefits and risks of the study, along with a statement informing them that their responses are completely anonymous and that no identifying information would be collected. Participants were also instructed not to put any identifying information in their responses and that they were allowed to stop the survey at any time. They were also able to take a break and return to the study when they were ready. Participants 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). The debriefing form described the purpose of the study and provided participants with the researchers’ contact information, along with

information regarding available mental health resources. Following completion, a separate online page offered participants (other than those recruited through CrowdFlower) the option of entering their email address to win a prize draw (e.g., one of four \$25 Amazon gift cards). Participants who accessed the survey through CrowdFlower were paid \$0.50 for completing the questionnaire. This amount is ideal, because if the remuneration were too high it may attract participants who are only doing it for the payment. Previous studies have used this same amount of compensation and successfully recruited participants for a 30 minute survey (e.g., Buhrmester, Kwang, & Gosling, 2011; Qureshi, Harris, & Atkinson, 2016). Furthermore, Maniaci & Rogge (2014) suggest that paying participants at least 1 cent for each minute spent completing a survey (e.g., 30 cents for a 30-minute study) is the minimum amount of compensation needed to provide a decent response rate. Thus, \$0.50 cents compensation was sufficient for the purposes of our current study (regardless of the amount of time they spent responding to the items). In order to ensure subjects were not completing the survey more than once so as to increase the amount earned, each Crowdfower account was only allowed to complete the survey only one time.

Measures

Demographics. Demographic information was obtained using questions about age, ethnicity, primary language, education, income, parental education and income, and relationship status (see Appendix C). These data provided descriptive information about the sample.

The Adverse Childhood Experiences (ACE) Study Questionnaire. Child maltreatment was assessed using the ACE Questionnaire (Felitti et al., 1998). The original measure consists of 10 categories of yes/no self-report items about adverse childhood experiences prior to age 19, including: CSA (2 items), CPA (2 items), CEA (2 items), CN physical (2 items), CN emotional (2 items), parental separation or divorce (1 item), partner violence toward the mother (3 items), problem substance use in the home (1 item), household member with depression, mental health problems, or who attempted suicide (1 item), and a household member who has been to prison (1 item; see Appendix D). The total

score is calculated by giving a score of 1 if participants answered yes to any of the multiple items within a category and adding the items to get a total ACE score ranging from 0 to 10.

This study focused in particular on items assessing CSA (e.g., “Did an adult person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way?” or “Attempt or actually have oral, anal, or vaginal intercourse with you?”), CPA (e.g., “Did a parent or other adult in the household often or very often push, grab, slap, or throw something at you?” or “Ever hit you so hard that you had marks or were injured?”), CEA (e.g., “Did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you?” or “Act in a way that made you afraid that you might be physically hurt?”), and CN (e.g., “Did you often or very often feel that you didn’t have enough to eat, had to wear dirty clothes, and had no one to protect you?” or “No one in your family loved you or thought you were important or special?”). Therefore, a cumulative child maltreatment score (called CM total) was calculated by giving a score of 1 if they answered yes to any of the multiple items within a category, and then adding up the total for all four types of child maltreatment (range = 0 to 4). The above child maltreatment items used in the current study are consistent with the child abuse and neglect items used by other studies that also used the ACE measure (e.g. Glowa, Olson, & Johnson, 2016). Although specifically examining other adverse childhood experiences are not the focus of this study, items assessing parental separation or divorce, partner violence toward the mother, problem substance use in the home, a household member with mental health problems or suicidality, and a household member who has been to prison were still included in the current study to provide more information about participants’ childhood experiences. The ACE Questionnaire was particularly ideal for the current study as it measures multiple forms of child maltreatment, it uses continuous scores in order to indicate levels of severity of abusive experiences, and it has sound psychometric properties. The ACE Questionnaire has been found to have acceptable internal consistency ($\alpha = 0.71$; McGavock & Spratt, 2014). The ACE Questionnaire in the current sample had a good reliability with a Cronbach’s alpha of .74. The alpha for the four-items

comprising the CM total variable was .66. Although this is in the lower range, values of alpha greater than .60 have been still considered to be acceptable levels of reliability (e.g., Ford et al., 2014; Streiner, 2003).

The Eating Attitudes Test–26 (EAT-26). The degree of eating disorder symptoms was assessed using the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982; see Appendix E), which is one of the most widely used standardized tools used to screen for eating disorders and symptoms (McEwen & Flouri, 2009). The EAT-26 consists of 26 self-report items that are rated on a 6-point frequency scale that ranges from *always* to *never*. Higher scores indicate greater eating disorder symptomology. For items 1 to 25, *always* responses are scored as 3, *usually* is scored as 2, *often* is scored as 1, and *sometimes*, *rarely*, and *never*, are scored as 0. Item 26 (“I enjoy trying new rich foods.”) is reverse scored, so *always*, *usually*, and *often* are scored as 0, *sometimes* is scored as 1, *rarely* is scored as 2, and *never* is scored as 3. All items are added together and scores can range from 0 to 78, with a score of 20 or more indicating that the respondent is at risk for an eating disorder (Garner et al.). The EAT-26 is made up of three factors: Dieting (13 items; e.g., “I am aware of the calorie content of foods that I eat”), Bulimia and Food Preoccupation (6 items; e.g., “I vomit after I have eaten” and “I give too much time and thought to food”), and Oral Control (7 items; e.g., “I display self-control around food.”). The Dieting subscale assesses problematic avoidance of foods that are fattening, the desire to restrict food intake, and preoccupation with thinness. The Bulimia and Food Preoccupation subscale relates to symptoms of bulimia nervosa and thinking about food. The Oral Control subscale consists of items that reflect self-control around eating and the belief that others are concerned about their weight and/or eating habits. The original measure was found to have good discriminative validity for individuals diagnosed with an eating disorder as well as screening for disturbances in eating in non-clinical samples. Garner et al. reported a Cronbach’s alpha of .86 for Dieting, .61 for Bulimia and Food Preoccupation, and .46 for Oral Control in a sample of individuals with no eating disorders. One

possible explanation for the lower Cronbach's alphas for Bulimia and Food Preoccupation and Oral Control is that the original sample involved a group of women college students who did not have an eating disorder diagnosis. Indeed, the reliability coefficients were much higher in a sample of women with anorexia nervosa, and the authors reported a Cronbach's alpha of .90 for Dieting, .84 for Bulimia and Food Preoccupation, and .83 for Oral Control (Garner et al.). In a more recent study, Mills, Newman, Cossar, and Murray (2015) reported a Cronbach's alpha of .91 for the total score. Another study reported that the EAT-26 demonstrated excellent internal consistency in a combined community and undergraduate non-clinical sample of men and women, with $\alpha = .99$ for the total scale, $\alpha = .98$ for Dieting, $\alpha = .97$ for Bulimia and Food Preoccupation, and $\alpha = .98$ for Oral Control (Juarascio, Forman, Timko, Butryn, & Goodwin, 2011). In the current study, both total scores and factor scores were used. The total score had an excellent reliability in the current sample ($\alpha = .91$). In the current sample, the EAT-26 showed good internal consistency with Cronbach's alphas of .87 for Dieting, and .83 for Bulimia and Food Preoccupation, and acceptable internal consistency ($\alpha = .72$) for Oral Control.

The EAT-26 has an additional section with four behavioural questions regarding the occurrence and frequency of binge eating and purging (e.g., vomiting, using laxatives, diuretics, etc.) in the past 6 months. Endorsing any of these behaviours is also indicative that the respondent is at risk for an eating disorder (Garner et al.). These items were used in the current study to provide further information about eating disorder symptomology during the past 6 months (e.g., frequency of taking laxatives or other pills to control weight).

Drug Abuse Screening Test–10 (DAST-10). Problematic drug use was assessed using the DAST-10 (Skinner, 1982; see Appendix F). The DAST-10 consists of 10 yes-no self-report items that measure harmful drug-use related behaviours (for drugs other than alcohol or nicotine). 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). The original measure asks participants only about their

substance use over the previous 12 months. For the purposes of the current study, I also asked separately about drug use prior to the past year in order to assess lifetime drug use. I calculated harmful lifetime drug use by assigning a score of 1 if both drug use in the last year and prior to the last year were checked off, .5 if one or the other but not both was checked off, and 0 if neither was checked off. This gave scores that range from 0 to 10. "Drug abuse" in this context refers to the use of drugs (e.g., cannabis as well as illicit drugs such as stimulants or hallucinogens) or excessive use of prescribed or over-the-counter drugs beyond the recommended directions. Sample items include: "Are you always able to stop using drugs when you want to?" and "Have you engaged in illegal activities in order to obtain drugs?" Scores of 1 to 2 indicate a "low level" drug problem, scores 3 to 5 indicate a "moderate level" of problematic drug use, scores of 6 to 8 indicate a "substantial level" drug problem, and scores of 9 to 10 correspond to a "severe level" drug problem (Skinner, 1992). I used both continuous total scores as well as a cut-off score of 3 or higher to indicate a problematic drug use, as this score was found to have the most optimal balance between sensitivity and specificity (Cocco & Carey, 1998; Yudko et al., 2007). 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 using a sample of undergraduate students (McCabe, Boyd, Cranford, Morales, & Slayden, 2006). The test-retest reliability for the DAST-10 was reported to be .71 by Cocco and Carey (1998) using a sample of psychiatric outpatients. In a more recent study, a high internal consistency was also reported, with a Cronbach's alpha of .88 (Giguère & Potvin, 2017). In the current sample, the DAST-10 had a good internal consistency reliability for lifetime problematic drug use ($\alpha = .85$) and acceptable reliability for use in the past year ($\alpha = .71$).

For the purposes of the current study, I also used a questionnaire created by Woodin (2008) to assess how frequently participants engaged 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*). These items were used to calculate frequencies for

the reported use of each of the illicit and non-medical drugs in order to get a sense of which types of drugs were most often being used.

Alcohol Use Disorders Identification Test (AUDIT). Problem drinking was assessed using the AUDIT (Babor, De La Fuente, Saunders, & Grant, 1992), which is a 10-item self-report screening measure of hazardous alcohol use, symptoms of alcohol dependence, and harmful alcohol use (see Appendix G). Participants respond to questions about their drinking behaviour (e.g., frequency, binge drinking, and amount consumed) and sample items include “How often do you have a drink containing alcohol?” as well as “How many drinks containing alcohol do you have on a typical day when you are drinking?” The response scale varies according to the question, and items are scored from 0 (*never*) to 4 (e.g., *4 or more times a week, 10 or more, daily or almost daily, or yes, in the last year*), with higher scores indicating greater severity of the drinking problem. Total scores range from 0 to 40 and a cut-off score of 8 or higher is generally used to indicate hazardous drinking (Goldstein, Faulkner, & Wekerle, 2013). In the original scale, the overall sensitivity using a cut-off score of 8 to indicate hazardous and harmful drinking ranged from 87% to 96% based on the average of results from a variety of international research centres (e.g., Australia, Norway, USA, etc.; overall value = 92%) and the specificity ranged from 81% to 98% (overall value = 94%; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Sensitivity refers to the percent of individuals with a drinking problem who are correctly identified and specificity refers to the percent of individuals with no drinking problems who are correctly identified. The AUDIT has been found to have good internal consistency (e.g., $\alpha = 0.88$; Goldstein et al.) and good test-retest reliability that ranged from 0.81 in a sample of primary care patients over a 6 week period (Daeppen, Yersin, Landry, Pecoud, & Decrey, 2000) to 0.84 over a one month period in a sample from the general population of Sweden (Selin, 2003). For the current study, I used total AUDIT scores to assess severity of drinking problems (i.e., continuous score) and a cut-off point of 8 for hazardous and harmful drinking. The reliability for AUDIT scores in the current sample was high ($\alpha = .88$).

In addition to the AUDIT, I asked several other questions in order to further assess drinking behaviours that are associated with at-risk alcohol use in women (e.g., levels of alcohol use associated with increased risk of injury, disease, or other harm, based on Canadian guidelines; Butt, Beirness, Gliksman, Paradis, & Stockwell, 2011). Specifically I asked:

1. How many drinks have you had each day during the past week (starting yesterday and going back over the past 7 days; World Health Organization, 2000)?
2. In the past week, how often did you have three or more drinks on one occasion? (Butt et al., 2011). Response options were as follows: *never* (0), *one or two days* (1), *three or four days* (2), *five or six days* (3), and *every day* (4).
3. In the past year, how often did you have three or more drinks on one occasion? (Butt et al., 2011). Response options were as follows: *never* (0), *less than monthly* (1), *monthly* (2), *weekly* (3), and *daily or almost daily* (4).
4. In the past year, have you had 3 or more drinks during a 3-hour period on 3 or more occasions? (Lecrubier et al., 1997). Responses consisted of *yes* or *no*.

The Coping Strategy Indicator (CSI). Coping tactics used to manage stressful situations were assessed using the CSI (Amirkhan, 1990), which consists of 33 self-report items divided into three coping strategies (11 items each) that were found to consistently emerge in studies using samples from the general population: Problem-Solving, Seeking Social Support, and Avoidance (see Appendix H). Problem-Solving involves planning and implementing steps to resolve the issue (e.g., “Brainstormed all possible solutions before deciding what to do”). Seeking Social Support reflects efforts to seek comfort from human contact, but not necessarily to get help with remediating the problem (e.g., “Let your feelings out to a friend”). Finally, Avoidance entails attempting to escape the problem by physically and psychologically withdrawing (e.g., “Tried to distract yourself from the problem”). An advantage of the CSI is that the three subscales have been found to be orthogonal, and thus do not lead to multicollinearity problems (Amirkhan, 1990). Participants are asked to think of an

important problem they experienced during the past 6 months and to rate the extent they used each coping behaviour to manage the problem. Items are rated on a Likert-type scale ranging from 1 (*not at all*) to 3 (*a lot*). Each subscale is scored separately by summing the included items together, with scores ranging from 11 to 33 and higher scores indicating greater use of that form of coping. Amirkhan (1990) reported strong psychometric properties using community samples, with high internal consistency (i.e., Cronbach's alpha of .89 for Problem-Solving, .93 for Seeking Social Support, and .84 for Avoidance) and stability over time (i.e., average test-retest correlations of .82 during 4 to 8 week periods). Other studies have also reported good internal reliabilities for each of the three subscales, with Cronbach's alphas ranging from .85 to .87 for Problem-Solving, .89 to .91 for Seeking Social Support, and .76 to .82 for Avoidance (Amirkhan & Marckwordt, 2016; Gipple et al., 2006). In addition, the CSI has demonstrated good convergence with other coping measures, with measures of personality and psychopathology (Amirkhan, 1990), and with predictions of actual coping behaviours in both laboratory simulations and in real-world settings (Amirkhan, 1994). The current sample had Cronbach's alphas of .91 for Problem-Solving, .92 for Seeking Social Support, and .86 for Avoidance.

The Emotion Regulation Questionnaire (ERQ). Emotion regulation was assessed using the ERQ (Gross & John, 2003). This is a 10-item self-report measure of how people control and manage their emotions (see Appendix I). The questionnaire assesses two emotion regulation strategies: Cognitive Reappraisal [6 items; e.g., “When I want to feel more *positive* emotion (such as joy or amusement), I *change what I’m thinking about*.”] and Expressive Suppression (4 items; e.g., “I keep my emotions to myself.”). Items are scored from 1 (*strongly disagree*) to 7 (*strongly agree*) and total scores for each subscale are averaged so that scores range from 1 to 7 for both reappraisal and suppression, with higher scores on each subscale indicating greater use of the emotion regulation strategy. The original scale was found to have adequate internal consistency with an average alpha reliability of .79 for Cognitive Reappraisal and .73 for Expressive Suppression (Gross & John, 2003).

Both subscales also had good test-retest reliability (.69 across a 3-month period; Gross & John, 2003). A more recent study by McRae et al. (2017) reported high internal consistency reliability of .85 for the reappraisal subscale and .79 for the suppression subscale using a sample of adult twins. A study by Lebowitz and Dovidio (2015) also reported high reliability for both subscales (i.e., .90 for reappraisal and .83 for suppression) in a sample of adults recruited online. The current sample was found to have a good internal consistency with a Cronbach's alpha of .88 for Cognitive Reappraisal and .77 for Expressive Suppression.

Data Analysis Plan

In order to analyze the data, means, standard deviations, and ranges were calculated for all the key continuous variables (adverse childhood experiences, eating disorder symptoms total, dieting, bulimia and food preoccupation, oral control, problematic drug use, problematic alcohol use, problem-solving coping, seeking social support coping, avoidance coping, cognitive reappraisal, and expressive suppression) and frequencies were calculated for the reported use of each of the illicit and non-medical drugs. Following this, prevalence rates were calculated for each of the key variables. I then compared data collected from CrowdFlower to data collected from the other psychology websites (i.e., Social Psychology Network, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research) using independent-samples *t* tests, in order to assess whether participants recruited from CrowdFlower differed in significant ways from participants recruited from the psychology websites. Subsequently, the relations between demographic variables and the key independent and dependent variables were assessed using correlations for continuous variables as well as one-way ANOVAs for categorical variables. Correlations among the key variables were also calculated.

Multiple regression was used to examine whether women with a history of child maltreatment differed from other women in regard to eating disorder symptoms, problematic substance use, emotion regulation, and coping strategies. I also used regression to assess whether women who use emotion

regulation and coping strategies that are typically less effective differed from other women in regard to problematic substance use and eating disorder symptoms.

Next, regressions were run with all four types of child maltreatment, all three types of coping strategies, and both types of emotion regulation strategies entered in the same step, for each of the following dependent variables: eating disorder severity total, problem drug use, and problem alcohol use. These analyses assessed which types of child maltreatment, coping strategies, and emotion regulation strategies made a unique contribution to eating disorder severity and problem substance use when all variables were entered into the same model.

After this, hierarchical regressions were used to assess whether coping style and emotion regulation strategies moderated the relations between child maltreatment and eating disorder symptoms, child maltreatment and problem substance use, as well as eating disorder symptoms and problem substance use. Finally, a canonical correlation analysis was conducted using the four child maltreatment variables as predictors of the eight long-term outcome variables (eating disorder symptoms, problematic drug use, problematic alcohol use, problem-solving coping, avoidance coping, seeking social support, cognitive reappraisal, and expressive suppression) to evaluate the multivariate, shared relationship between the two variable sets.

Results

Preliminary Analyses

FluidSurveys, an online survey software, was used to collect data. Because the current survey did not have the option of a “no answer” response (i.e., participants could not proceed unless each question was answered), there was no need for missing data procedures. Once collected, data were examined for unusual response patterns. For example, data were inspected for odd answers such as weighing 30 pounds or measuring 0 feet tall. For items that asked about height and weight, box plots were created to detect outliers. Using box plots is a common method of detecting outliers, and they are identified on the graph by an asterisk (Field, 2009). Responses that were considered outliers were replaced by the median for that variable, a technique that is frequently used to deal with outliers (e.g., Leikauf et al., 2017; Shilyansky et al., 2016). Outliers were replaced by the median for height ($n = 19$), current weight ($n = 19$), highest weight ($n = 15$), lowest weight ($n = 25$), and ideal weight ($n = 21$). For the lowest weight item, the outliers that were replaced by the median were all improbable weights (i.e., 60 pounds or less). All other variables besides the ones just listed were within the expected range for the associated measure. The data of individuals whose responses on the above items were considered outliers were examined more closely and their other responses were acceptable and did not show any odd answers.

Frequencies and Means

A total of 413 women completed this study. Participants who were younger than 19 years old were removed from this study ($n = 29$) and one participant whose responses did not make sense was deleted (e.g., they entered the same Crowdfunder contributor identification number as another participant yet reported they completed the study on the Psychological Research on the Net website, they reported they were 7 feet and 5 inches tall, etc.). This resulted in a final sample of 383 women. The mean age was 34.34 years ($Mdn = 31.00$, $SD = 12.81$, range = 19 to 74 years), 30.29% were 25 years old or younger, and 13.58% were 50 years or older. Most of the participants identified as

Caucasian ($n = 273$; 71.28%), followed by Hispanic ($n = 37$; 9.66%), and African-Canadian/African-American ($n = 31$; 8.09%). The majority of the participants reported their first language was English ($n = 348$; 90.86%) and that their country of origin was the United States ($n = 261$; 68.15%). Further details about demographic information are displayed in Table 1 (e.g., ethnicity, primary language, socioeconomic status, etc.).

Means, standard deviations, and ranges were calculated for all continuous variables [e.g., adverse childhood experiences, eating disorder symptoms total, dieting, bulimia and food preoccupation, and oral control (all subscales of the EAT-26), problematic drug use, problematic alcohol use, problem-solving coping, seeking social support coping, avoidance coping, cognitive reappraisal, and expressive suppression; see Table 2]. Frequencies were calculated for the reported use of each of the illicit and non-medical drugs (e.g., marijuana, cocaine, LSD, non-medical use of prescription medication, etc.; see Table 3). For drugs other than marijuana and non-medical use of prescription medications, less than 2% of participants used any of the drugs 10 or more times in their lifetime. For marijuana use, 15.40% used it 10 or more times and for non-medical use of prescription medications, 8.36% used it 10 or more times.

Table 1

Selected Demographic Characteristics of Participants

Variable	<i>N</i>	<i>n</i>	%
Ethnicity	383		
Asian		25	6.53
African-Canadian/African-American		31	8.09
Caucasian		273	71.28
Hispanic		37	9.66
Other		17	4.44
Primary Language	383		
English		348	90.86
French		5	1.31

Spanish	18	4.70
Other (e.g., German, Cantonese)	12	3.13
Country of Origin	383	
United States	261	68.15
Canada	56	14.62
Venezuela	13	3.39
United Kingdom	11	2.87
Other (e.g., France)	42	10.97
Relationship Status	383	
Single and never married	85	22.19
Never married but dating	81	21.15
Living with partner	49	12.79
Married	142	37.08
Separated/divorced/widowed	22	5.74
Other	4	1.04
Annual Personal Income (in \$CAD)	383	
Less than \$10,000	107	27.94
\$10,000 - \$19,999	47	12.27
\$20,000 - \$29,999	52	13.58
\$30,000 - \$39,999	51	13.32
\$40,000 - \$49,999	41	10.70
\$50,000 - \$99,999	75	19.58
\$100,000 or more	10	2.61
Highest Level of Education	383	
Some high school	4	1.04
Completed high school	49	12.79
Trade school	23	6.01
Some university	122	31.85
Undergraduate degree	119	31.07
Master's degree	53	13.84
Doctoral degree	5	1.31
Other professional degree (e.g., M.D.)	8	2.09

N = 383.

Table 2

Descriptive Statistics for Continuous Measures of Interest

Variable	<i>M</i>	<i>SD</i>	Range
Adverse Childhood Experiences	2.59	2.33	0 – 10
EAT-26 total score	11.75	12.01	0 – 69
Dieting	7.20	7.51	0 – 36
Bulimia and Food Preoccupation	2.06	3.36	0 – 18
Oral Control	2.50	3.27	0 – 18
Lifetime PDU (DAST-10)	1.58	1.60	0 – 9
PAU (AUDIT)	4.65	5.81	0 – 40
Problem-Solving Coping	23.22	6.02	11 – 33
Social Support Coping	21.66	5.87	11 – 33
Avoidance Coping	21.21	5.55	11 – 33
Cognitive Reappraisal	4.70	1.15	1 – 7
Expressive Suppression	3.88	1.26	1 – 7

Note. EAT-26 = Eating Attitudes Test-26; PDU = Problematic Drug Use; DAST-10 = Drug Abuse Screening Test-10; PAU = Problematic Alcohol Use; AUDIT = Alcohol Use Disorders Identification Test.

N = 383.

Table 3

Frequencies of Lifetime Illicit and Non-Medical Drug Use

Frequency of Drug Use	Marijuana % (n)	LSD % (n)	Ecstasy/ MDMA % (n)	Other Hallucinogens % (n)	Cocaine % (n)	Heroin % (n)	Crystal Meth % (n)	Inhalants % (n)	NMU Med % (n)
Never	49.87% (191)	86.42% (331)	87.99% (337)	81.72% (313)	83.29% (319)	96.08% (368)	94.26% (361)	93.99% (360)	71.54% (274)
1-2 times	13.32% (51)	8.09% (31)	5.48% (21)	13.32% (51)	6.27% (24)	1.31% (5)	2.87% (11)	3.39% (13)	8.88% (34)
3-9 times	21.41% (82)	4.96% 19	5.48% (21)	4.18% (16)	9.40% (36)	1.57% (6)	2.35% (9)	1.83% (7)	11.23% (43)
10 or more times	15.40% (59)	0.52% (2)	1.04% (4)	0.78% (3)	1.04% (4)	1.04% (4)	0.52% (2)	0.78% (3)	8.36% (32)

Note. NMU Med = Non-Medical Use of Prescription Medications.

N = 383.

Prevalence Rates

Child maltreatment (Adverse Childhood Experience Questionnaire; ACE). Each type of adverse childhood experience (i.e., ACE) was reported by the following percentages of women: CSA (20.62%; $n = 79$), CPA (25.59%; $n = 98$), CEA (37.34%; $n = 143$), CN physical type (12.01%; $n = 46$), CN emotional type (38.64%; $n = 148$), parental separation or divorce (42.56%; $n = 163$), violence toward the mother (12.01%; $n = 46$), problem substance use in the home (30.81%; $n = 118$), household member with depression, mental health problems, or who attempted suicide (30.55%; $n = 117$), and a household member who has been in prison (9.14%; $n = 35$). The prevalence rates of the types of maltreatment in my study were similar to those in other studies using adult samples (e.g., Alcalá, von Ehrenstein, & Tomiyama, 2016; Anda et al., 2006; Felitti et al., 2019) except for CN (i.e., one study reported lower rates of CN [Ports, Ford, & Merrick, 2016], while another reported higher rates [Chilton, Knowles, Rabinowich, & Arnold, 2015]). The mean ACE score in the current study was 2.59 ($SD = 2.33$), which was similar to the mean score of 2.00 reported in a sample of mostly women child service providers (Esaki & Larkin, 2013). In the current sample, 0 ACEs were reported by 24.02% ($n = 92$), 1 ACE was reported by 18.02% ($n = 69$), 2 ACEs were reported by 12.53% ($n = 48$), 12.01% ($n = 46$) reported 3 ACEs, and 4 or more ACEs were reported by 33.42% ($n = 128$) of women. In the present study, my findings were generally consistent with those from other studies except that in my study fewer people reported no ACEs and more people reported 4 or more ACEs (e.g., compared to a sample of adult men and women from the United States; Chapman et al., 2011). For the purposes of the current study, a cumulative child maltreatment score was calculated using the ACE measure, by adding all four types of child maltreatment together ($M = 1.25$, $SD = 1.27$, range = 0 to 4). This variable was called CM total and was used in the analyses looking at overall levels of child maltreatment, while analyses assessing separate types used the CSA, CPA, CEA, and CN variables.

Eating disorder symptoms (Eating Attitudes Test-26; EAT-26). Overall, 20.63% ($n = 79$) had scores indicating an increased level of concern regarding reported eating disorder symptoms (i.e.,

scores of 20 or more on the EAT-26 assessing current eating disorder symptoms; Garner, Olmsted, Bohr, & Garfinkel, 1982). In addition, 47.78% ($n = 183$) reported having binged (see Introduction section for definition of a binge) in the past six months and 21.67% ($n = 83$) reported self-induced vomiting in the past six months. The use of laxatives, diet pills or diuretics to control their weight or shape in the past six months was reported by 28.46% ($n = 109$), while 49.87% ($n = 191$) indicated that in the past six months they exercised more than 60 minutes a day to lose or to control their weight. A total of 18.28% ($n = 70$) noted that they lost 20 pounds or more in the past 6 months and 7.31% ($n = 28$) reported they had been treated for an eating disorder at some point in their lives. These rates are somewhat higher than those found in a sample of women undergraduates (Heidelberg & Correia, 2009); similarly, in my study, 7.31% reported they had ever received treatment for an eating disorder, compared to 3% in Heidelberg and Correia's study. The average EAT-26 total score in my study was 11.75, which was relatively similar to the average in Lavender, Gratz, and Tull's (2011) sample of women undergraduate students. In the current study, 20.63% of women were in the at-risk range. This is higher than the rate found in a sample of women from the general population (Doran & Lewis, 2012) but lower than the rate found in a study of young adult women athletes (Filaire, Massart, Hua, & Scanff, 2015).

Problematic substance use (Drug Abuse Screening Test-10 and Alcohol Use Disorders

Identification Test; DAST-10 and AUDIT). No drug use was reported by 22.72% ($n = 87$), low level drug use problems (i.e., DAST-10 scores of 1 to 2; Skinner, 1982) were reported by 55.61% ($n = 213$), moderate levels of problematic drug use (i.e., scores of 3 to 5) were reported by 18.28% ($n = 70$), substantial levels of problematic drug use (i.e., scores of 6 to 8) were reported by 2.87% ($n = 11$), and severe levels of problematic drug use (i.e., scores of 9 to 10) were reported by less than 1% ($n = 2$). In total, 21.67% ($n = 83$) of participants scored in the problematic range for drug use (i.e., score of 3 or above), which is comparable to the rate found in a sample of men and women undergraduates (Blum et al., 2018). Problematic drug use on the DAST-10 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). My findings were similar to those in a sample of adult men and women (Krill, Johnson, & Albert, 2016) with regard to the mean DAST-10 score, as well as the rate of moderate, substantial, and severe levels of problematic drug use. However, my study found a lower rate of low-level drug use problems.

In the current study, the most frequently used drug was marijuana, with a total of 50.13% ($n = 192$) of participants ever having used it. Of note is that data were collected before the legalization of marijuana in Canada, and these rates may have increased since then (although only 14.62% of the sample was from Canada). As shown in the 2012 Canadian Community Health Survey–Mental Health, 43% of Canadians aged 15 or older report having used marijuana, which is somewhat lower than my findings (Statistics Canada, 2012). The current study's finding is comparable to the rate of lifetime marijuana use reported in a study by Hashibe and colleagues (2006). Following this in the present study was non-medical use of prescription medications, with a total of 28.46% of participants reporting having misused them. This is somewhat higher than the rate found in a study using an American sample (Substance Abuse and Mental Health Services Administration, 2011) but more comparable to the finding in a college sample (Watkins, 2016). The next most commonly used drug type was hallucinogens other than LSD, which were used by 18.28% of participants. Frequencies for the reported use of each of the illicit and non-medical drugs are reported in Table 3.

On the AUDIT, 22.72% ($n = 87$) of women scored in the problematic range for alcohol use (i.e., score of 8 or above; Goldstein et al., 2013). 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). A previous study assessing a sample of adult women (Krill et al., 2016) reported a mean AUDIT score similar to the current study, however I found a higher rate of participants in the problematic alcohol use

range, which may be due to the proportion of younger participants in the current sample. Several additional items assessing behaviours that are associated with at-risk alcohol use in women (e.g., levels of alcohol use associated with increased risk of injury, disease, or other harm, based on Canadian low-risk drinking guidelines) indicated that participants drank on average 3.20 drinks per week ($SD = 5.99$, range = 0 – 42 drinks; Butt et al., 2011). This is lower than the average reported in a sample of women undergraduates (Neighbors, Lindgren, Knee, Fossos, & DiBello, 2011). As the rate of drinking tends to be higher among college students than the general population, this might explain the difference between my findings and that of Neighbors and colleagues. In my study, 47.00% ($n = 180$) of women reported never having three or more drinks on one occasion in the past year, while 33.94% ($n = 130$) reported having three or more drinks on one occasion less than monthly, and 11.75% ($n = 45$) reported doing so monthly. Also, 6.01% ($n = 23$) reported having three or more drinks on a weekly basis and 1.31% ($n = 5$) reported having three or more drinks on one occasion on a daily or almost daily basis. In addition, 27.68% ($n = 106$) reported having had three or more drinks during a 3-hour period on three or more occasions in the past year.

Coping style (Coping Strategy Indicator; CSI). The mean level of coping by problem-solving, coping using social support, and avoidance coping (see Table 2) were similar to those in a sample of men and women college students (Barnes & Lightsey, Jr., 2005).

Emotion Regulation (Emotion Regulation Questionnaire; ERQ). Regarding scores for emotion regulation strategies, the mean for cognitive reappraisal and expressive suppression (see Table 2) were similar to scores found in a sample of women undergraduate students (Balzarotti, John, & Gross, 2010).

Comparisons between Data Collected from Various Websites

Data collected from CrowdFlower were compared with data collected from the other websites (i.e., Social Psychology Network, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research). This was explored because most of the data were from CrowdFlower and they

differed from the other sites in regard to reimbursement (i.e., instead of a prize draw). Participants' age was compared using independent-samples *t* tests. Results indicated that the mean age of women who completed the study using CrowdFlower ($M = 36.31, SD = 12.08$) was significantly higher than the mean age of women who completed the study on the other websites ($M = 30.26, SD = 13.29$), ($t[381] = 4.50, p < .001, 95\% CI = 3.41$ to 8.70), however the effect size was small ($r = .22$). In addition, scores on each of the key variables were compared using independent-samples *t* tests. Results indicated that the mean value of the CM total score for women who completed the study using CrowdFlower ($M = 1.17, SD = 1.22$) was not significantly different from the mean value of the CM total score for women who completed the study on the other websites ($M = 1.40, SD = 1.35$), ($t[381] = -1.63, p = .10, 95\% CI = -0.49$ to -0.05). There were no significant differences found between the mean value of EAT-26 total scores among the participants who were recruited from CrowdFlower ($M = 11.01, SD = 11.95$), compared to the mean value of EAT-26 total scores for those who were recruited from the other websites ($M = 13.18, SD = 12.05$), ($t[381] = -1.68, p = .09, 95\% CI = -4.71$ to 0.37). Mean lifetime problematic drug use scores for women recruited via CrowdFlower ($M = 1.39, SD = 1.58$) were significantly lower than mean lifetime problematic drug use scores for women recruited via the other websites ($M = 1.95, SD = 1.57$), ($t[381] = -3.27, p = .001, 95\% CI = -0.89$ to -0.22). Nonetheless, the effect size was small ($r = .17$). Mean problematic alcohol use scores for women recruited via CrowdFlower ($M = 4.42, SD = 5.76$) were not significantly different from mean problematic alcohol use scores for women recruited via the other websites ($M = 5.09, SD = 5.91$), ($t[381] = -1.07, p = .29, 95\% CI = -1.90$ to 0.56). Regarding coping strategies, mean scores for problem-solving coping were not significantly different for women recruited from CrowdFlower ($M = 23.00, SD = 6.20$) compared to women recruited from the other websites ($M = 23.63, SD = 5.68$), ($t[381] = -0.98, p = .33, 95\% CI = -1.91$ to 0.64). Mean scores for social support coping also were not significantly different for women recruited from CrowdFlower ($M = 21.43, SD = 5.86$) compared to women recruited from the other websites ($M = 22.09, SD = 5.88$), ($t[381] = -1.04, p = .30, 95\% CI = -1.90$ to 0.58). However, mean

scores for avoidance coping for women recruited via CrowdFlower ($M = 20.47$, $SD = 5.45$) were significantly lower than mean scores for avoidance coping for women recruited via the other websites ($M = 22.64$, $SD = 5.48$), ($t[381] = -3.70$, $p < .001$, $95\% CI = -3.33$ to -1.02). Nonetheless, the effect size was small ($r = .19$). For emotion regulation, mean scores for cognitive reappraisal did not differ between participants who completed the study on CrowdFlower ($M = 4.67$, $SD = 1.12$) versus other websites ($M = 4.77$, $SD = 1.21$), ($t[381] = -0.84$, $p = .40$, $95\% CI = -0.35$ to 0.14). Similarly, mean scores for expressive suppression did not differ between participants who completed the study on CrowdFlower ($M = 3.94$, $SD = 1.22$) versus other websites ($M = 3.76$, $SD = 1.35$), ($t[381] = 1.35$, $p = .18$, $95\% CI = -0.08$ to 0.45). In summary, only small effect sizes or no significant differences were found when comparing scores for participants recruited from CrowdFlower to scores for participants recruited from other websites. In particular, CrowdFlower subjects scored differently (however the effect sizes were small) for the following variables: age, lifetime problematic drug use, and avoidance coping. Because a small effect size can indicate no meaningful difference, regardless of whether the test statistic is significant (i.e., even if a test statistic is significant, it does not necessarily indicate that the effect being assessed is important or meaningful; Field, 2013), participants were combined across recruitment sites for subsequent analyses.

Intercorrelations among Demographic Variables and Variables of Interest

The relations among demographic variables and the key independent and dependent variables (i.e., CM total, eating disorder symptoms, problematic alcohol use, problematic drug use, coping, and emotion regulation) were assessed using correlations for continuous variables (e.g., age) as well as one-way ANOVAs for categorical variables (e.g., ethnicity).

Age. Although effect sizes were relatively small, age was negatively correlated with EAT-26 total scores (see Table 5 for significant correlations with age) and problematic alcohol use. This indicates that younger participants reported greater severity of eating disorder symptoms and problematic alcohol use. Age was also significantly correlated with problem-solving coping, avoidance

coping, and expressive suppression. This suggests that older participants were more likely to score higher on problem-solving coping, but younger participants were more likely to have greater avoidance coping and expressive suppression. Age was not significantly associated with any of the other key variables (i.e., CM total, problematic drug use, seeking social support coping, and cognitive reappraisal; $p > .05$).

Ethnicity. A one-way ANOVA assessing the relation between ethnic affiliation and higher CM total scores was significant $F(4, 378) = 3.21, p = .01$. The strength of the association between ethnicity and the CM total scores as assessed by the Partial Eta Squared was low, with the ethnicity factor accounting for 3.30% of the variance of the CM total score. Follow-up tests were performed to assess pairwise differences among the means (see Table 4). Because equal variances were not assumed, Dunnett's C post-hoc test was used (Field, 2005). Asian participants scored significantly lower for mean score of CM total than Caucasians, Hispanics, and Others. However, n 's for cultural groups other than Caucasians were small. A one-way ANOVA assessing the relation between ethnic affiliation and severity of eating disorder symptoms (i.e., EAT-26 total) was not significant $F(4, 378) = 1.69, p = .15$. Thus, there were no differences found for eating disorder symptoms among the different ethnic groups.

Table 4

Significant Pairwise Differences among the Means from a One-way ANOVA Assessing the Relation Between Ethnic Affiliation and Higher Scores on Child Maltreatment

Ethnicity	<i>M</i>	<i>SD</i>	<i>n</i>
Asian	0.64 ^{C, H, O}	0.81	25
Caucasian	1.22 ^A	1.27	273
Hispanics	1.46 ^A	1.33	37
Other	1.94 ^A	1.39	17

Note. A = Asian. C = Caucasian. H = Hispanics. O = Other. Letter superscripts indicate significant differences from another group.
 $N = 383$.

Ethnicity was significantly related to problematic drug use scores (i.e., DAST-10 total), $F(4, 378) = 3.98, p = .004$. The strength of the association between ethnicity and problematic drug use scores as assessed by the Partial Eta Squared was low, with the ethnicity factor accounting for 4.00% of the variance of problematic drug use. Dunnett's C post-hoc test showed that Asians ($M = 0.54, SD = 0.56$) scored significantly lower for mean score of problematic drug use than Caucasians ($M = 1.68, SD = 1.63$), and Hispanics ($M = 1.55, SD = 1.63$), and Others ($M = 2.18, SD = 1.70$).

There was a significant relation found between ethnicity and problematic alcohol use scores (i.e., AUDIT total) $F(4, 378) = 3.91, p = .004$. The strength of the association between ethnicity and problematic alcohol use scores as assessed by the Partial Eta Squared was not very strong, with the ethnicity factor accounting for 4.00% of the variance of problematic alcohol use. Follow-up tests were performed to assess pairwise differences among the means. Dunnett's C post-hoc test indicated that there was only a significant difference in mean score of problematic alcohol use between Asians ($M = 2.72, SD = 3.21$) and Hispanics ($M = 7.84, SD = 8.09$), with Hispanics reporting greater problematic alcohol use than Asians.

One-way ANOVAs further revealed that ethnicity was not significantly associated with problem-solving coping [$F(4, 378) = 0.86, p = .49$], seeking social support [$F(4, 378) = 1.03, p = .39$], avoidance [$F(4, 378) = 1.29, p = .27$], cognitive reappraisal [$F(4, 378) = 1.37, p = .24$], and expressive suppression [$F(4, 378) = 1.35, p = .25$]. Thus, there were no differences found for coping strategies or emotion regulation among the different ethnic groups.

Relationship Status. One-way ANOVAs showed that relationship status (e.g., single, never married, not dating; living with romantic partner; separated or divorced) was not significantly associated with CM total, eating disorder symptoms, problem-solving coping, seeking social support, cognitive reappraisal, or expressive suppression, and all the p values were non-significant (i.e., ranged from $p = .07$ to $p = .57$).

Relationship status was significantly related to problematic drug use scores $F(7, 375) = 4.43, p < .001$. The strength of the association between relationship status and problematic drug use scores as assessed by the Partial Eta Squared was low, with the relationship status factor accounting for 7.60% of the variance of problematic drug use. Dunnett's C post-hoc test showed that there was a significant difference in mean score of problematic drug use between those who were single, never married, and not dating ($M = 1.24, SD = 0.93$) and those who were living with their romantic partner ($M = 2.17, SD = 1.70$), with those living with their romantic partner having greater problematic substance use.

There was also a significant relation between relationship status and problematic alcohol use scores $F(7, 375) = 2.15, p = .04$. The strength of the association between relationship status and problematic alcohol use scores as assessed by the Partial Eta Squared was not very strong, with the relationship status factor accounting for 3.90% of the variance of problematic alcohol use. Dunnett's C post-hoc test showed that there was a significant difference in mean score of problematic alcohol use such that those who were separated or divorced had significantly lower problematic alcohol use ($M = 1.71, SD = 2.20$) than those who were single, never married, and dating casually ($M = 6.38, SD = 6.26$), those who were single, never married, in a committed relationship ($M = 5.20, SD = 4.94$), those who were living with a romantic partner ($M = 5.16, SD = 6.43$), and those who were married and living with spouse ($M = 4.61, SD = 6.42$).

Coping by avoidance was significantly related to relationship status $F(7, 375) = 3.72, p = .001$. The strength of the association between relationship status and avoidance scores as assessed by the Partial Eta Squared was low, with the relationship status factor accounting for 6.50% of the variance of avoidance. Dunnett's C post-hoc test showed that there was a significant difference in mean score of avoidance between single, never married, dating casually ($M = 22.89, SD = 4.62$) and married and living with spouse ($M = 19.69, SD = 5.61$), as well as single, never married, in a committed relationship ($M = 23.48, SD = 4.88$) and married and living with spouse. Individuals who were married and living with their spouse had the lowest avoidance scores.

Annual Personal Income. One-way ANOVAs revealed that annual income was not significantly associated with CM total [$F(10, 372) = 0.54, p = .86$], eating disorder symptoms [$F(10, 372) = 1.18, p = .30$], problematic drug use [$F(10, 372) = 1.44, p = .16$], problematic alcohol use [$F(10, 372) = 1.31, p = .22$], problem-solving coping [$F(10, 372) = 1.31, p = .22$], seeking social support [$F(10, 372) = 0.53, p = .87$], avoidance [$F(10, 372) = 1.28, p = .24$], cognitive reappraisal [$F(10, 372) = 0.99, p = .45$], and expressive suppression [$F(10, 372) = 1.06, p = .39$].

Highest Level of Education. A one-way ANOVA assessing the relation between highest level of education and higher CM total scores was significant $F(7, 375) = 2.76, p = .01$. The strength of the association between education and the CM total scores as assessed by the Partial Eta Squared was not very strong, with the education level factor accounting for 4.90% of the variance of the CM total score. Follow-up tests were performed to assess pairwise differences among the means. Dunnett's C post-hoc test revealed significant differences in mean score of CM total and that those who completed another professional degree (e.g., M.D., LLB; $M = 0.13, SD = 0.35$) had significantly lower CM total scores than those who completed high school ($M = 1.57, SD = 1.38$), a trade diploma ($M = 1.26, SD = 1.32$), some undergraduate courses ($M = 1.34, SD = 1.27$), an undergraduate degree ($M = 1.07, SD = 1.18$), and a master's degree ($M = 1.34, SD = 1.30$). In addition, those who completed a doctoral degree ($M = 0.20, SD = 0.45$) had significantly lower CM total scores than those who completed high school and some undergraduate courses. Thus, individuals with another professional degree or a doctoral degree reported less CM total than those with other levels of education.

One-way ANOVAs showed that education level was not significantly associated with eating disorder symptoms [$F(7, 375) = 1.96, p = .06$], problematic drug use [$F(7, 375) = 1.79, p = .08$], problematic alcohol use [$F(7, 375) = 0.56, p = .79$], problem-solving coping [$F(7, 375) = 1.04, p = .40$], seeking social support [$F(7, 375) = 0.80, p = .59$], avoidance [$F(7, 375) = 1.35, p = .23$], cognitive reappraisal [$F(7, 375) = 0.85, p = .54$], and expressive suppression [$F(7, 375) = 1.13, p = .34$].

In summary, the following demographics were related to my variables of interest: age, ethnicity, relationship status, and level of education. However, the effects were all relatively small and the alpha levels were greater than .001. Because effect sizes are found to better reflect the importance of a result than the significance of the test statistic (Field, 2013), and the strength of the association between potential demographic covariates (e.g., ethnicity, SES) and the key variables (e.g., CM total, problematic substance use, etc.) had a relatively small effect size (regardless of the significance of the test statistic), demographic variables were not controlled for in the analyses that follow.

Intercorrelations among Key Variables

Correlations among the key variables (i.e., CM total, eating disorder symptoms, problematic drug use, problematic alcohol use, problem-solving coping, seeking social support, avoidance, cognitive reappraisal, and expressive suppression) are presented in Table 5. Correlations among CM total, eating disorder symptoms, additional alcohol use items, and types of drugs used are presented in Table 6. Significant correlations are discussed below.

Child maltreatment. Not surprisingly, CM total was associated with behaviours that are generally considered less adaptive, including eating disorder symptoms, problematic drug use, problematic alcohol use, and avoidance coping ($p < .01$; see Table 5 for specific r -values). CM total was also associated with a greater amount of total drinks per week, marijuana use, cocaine use, and non-medical use of prescription medications. The highest correlation for CM total was with avoidance coping ($r = .26, p < .01$).

Eating disorder symptoms. Eating disorder symptoms were positively correlated with CM total scores and typically less adaptive behaviours that include problematic drug use, problematic alcohol use, avoidance coping, expressive suppression, drinks per week, LSD use, and MDMA use. Eating disorder symptoms were negatively correlated with cognitive reappraisal.

Problematic substance use. As can be expected, there was a positive association among drug and problematic alcohol use and other struggles or ways of coping that are typically less adaptive, such

as CM total, eating disorder symptoms, and avoidance coping. Problematic alcohol use was also positively correlated with expressive suppression and negatively associated with problem-solving coping. Greater marijuana use was associated with greater use of other drugs as well (e.g., LSD, MDMA, cocaine, etc.).

Coping and emotion regulation. Given that problem-solving, seeking support, and cognitive reappraisal are generally considered as adaptive behaviours, the finding that they were positively correlated with each other and negatively correlated with problem behaviours such as problematic alcohol use, eating disorders, as well as expressive suppression, was expected. Avoidance coping was positively associated with difficulties such as CM total, eating disorder symptoms, problematic drug use, and problematic alcohol use. Meanwhile it was negatively associated with cognitive reappraisal.

Table 5

Correlations among CM Total, Eating Disorders Symptoms, Problematic Drug Use, Problematic Alcohol Use, Problem-Solving coping, Seeking Social Support, Avoidance, Cognitive Reappraisal, Expressive Suppression, and Age

Variable	1	2	3	4	5	6	7	8	9
1. CM total	–								
2. EAT-26	.13*	–							
3. DAST-10	.25**	.11*	–						
4. AUDIT	.16**	.20**	.41**	–					
5. Problem-Solving	.12*	-.03	.07	-.12*	–				
6. SSS	.07	.03	.06	.02	.45**	–			
7. Avoidance	.26**	.26**	.23**	.15**	.14**	.25**	–		
8. CR	-.04	-.12*	.002	-.06	.24**	.21**	-.14**	–	
9. ES	.03	.16**	-.02	.20**	-.13*	-.22**	.19**	-.01	–
10. Age	-.04	-.11*	-.05	-.23**	.13*	-.05	-.33**	.09	-.20**

Note. CM total = Child maltreatment total; EAT-26 = Eating Attitudes Test-26; DAST-10 = Drug Abuse Screening Test-10; AUDIT = Alcohol Use Disorders Identification Test; SSS = Seeking Social Support; CR = Cognitive Reappraisal; ES = Expressive Suppression.
* $p < .05$; ** $p < .01$.
 $N = 383$.

Table 6

Correlations among Key Variables, Drugs Used, and Substance Use Behaviours

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. CM total	–													
2. EAT-26	.13*	–												
3. Drinks PWT	.15**	.11*	–											
4. 3+ Drinks PW	.08	.17**	.69**	–										
5. 3+ Drinks PY	.10	.13**	.54**	.68**	–									
6. 3+ Drinks 3HP	.09	.14**	.34**	.40**	.50**	–								
7. Marijuana use	.18**	.04	.17**	.13*	.23**	.12*	–							
8. LSD use	.05	.15**	.25**	.34**	.24**	.06	.38**	–						
9. MDMA use	.10	.16**	.27**	.37**	.26**	.11*	.33**	.71**	–					
10. HU	.04	.06	.20**	.32**	.20**	.06	.43**	.75**	.62**	–				
11. Cocaine use	.13**	.09	.18**	.28**	.16**	.08	.49**	.63**	.59**	.64**	–			
12. Heroin use	.06	.04	.19**	.33**	.16**	.12*	.17**	.45**	.54**	.47**	.50**	–		
13. Meth use	-.004	.01	.17**	.32**	.10*	-.01	.22**	.58**	.55**	.61**	.56**	.57**	–	
14. Inhalants use	.08	.05	.15**	.32**	.14**	.06	.16**	.54**	.51**	.50**	.34**	.55**	.53**	–
15. NMU med	.16**	.12*	.19**	.21**	.14**	.15**	.36**	.24**	.27**	.35**	.41**	.36**	.28**	.25**

Note. PWT = Per Week Total; PW = Past Week; PY = Past Year; 3HP = 3-Hour Period on 3 or More Occasions; HU = Hallucinogens Use; NMU Med = Non-Medical Use of Prescription Medications.

* $p < .05$; ** $p < .01$.

$N = 383$

Hypothesis 1: Child Maltreatment and Eating Disorder Symptoms

Data were analyzed using multiple regression in SPSS. As stated in hypothesis #1, it was expected that women survivors of child maltreatment (i.e., CSA, CPA, CEA, and CN; each entered as a categorical variable) would report more eating disorder symptoms (i.e., more dieting, bulimia and food preoccupation, and oral control) than women without a history of child maltreatment. In each of the analyses that follow (except when otherwise specified), all four child maltreatment variables were entered for each dependent variable. Once again, because a small effect size was found for the associations between potential demographic covariates (e.g., ethnicity, SES) and the key variables (e.g., CM total, problematic substance use, etc.), demographic variables were not controlled for in the regressions that follow. Furthermore, for the analyses that follow, a significance level of $p < .001$ was used in order to account for the large number of analyses conducted and to reduce the likelihood of Type I error (Field, 2013). For the first regression, dieting was entered as the dependent variable. However, the analysis was not significant, $F(4, 378) = 2.71, p = .03, R^2 = .03$. In the second regression, the child maltreatment variables did not predict greater bulimia and food preoccupation, $F(4, 378) = 1.90, p = .11, R^2 = .02$. Similarly, the child maltreatment variables did not predict oral control, $F(4, 378) = 1.50, p = .20, R^2 = .02$. Taken together, this indicated that none of the four types of child maltreatment examined in this study predicted eating disorder symptoms that included dieting, bulimia, food preoccupation, and oral control.

Hypothesis 2: Child Maltreatment and Substance Use

As stated in hypothesis #2, it was predicted that survivors of child maltreatment would engage in greater levels of problematic substance use (i.e., drugs and alcohol) than women without a history of child maltreatment. For problematic drug use, although the amount of variance was small, the analysis was significant, $F(4, 378) = 9.16, p < .001, R^2 = .09$ (see Table 7). Results showed that women who experienced CSA engaged in greater levels of problematic drug use. However, the analysis assessing whether survivors of child maltreatment engaged in greater levels of problematic alcohol use was not

significant, $F(4, 378) = 3.67, p = .01, R^2 = .04$ indicating that experiencing a greater number of types of child maltreatment was not associated with greater levels of problematic alcohol use.

Table 7

Regression Analysis for Child Maltreatment Variables Predicting Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2
				0.09
CEA	0.56	0.20	.17	
CPA	-0.01	0.21	<-.01	
CSA	0.81	0.20	.20***	
CN	0.02	0.18	.01	

Note. CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect.

*** $p < .001$.

$N = 383$.

Hypothesis 3: Child Maltreatment and Coping Strategies

As stated in hypothesis #3, survivors of child maltreatment were expected to use typically less effective coping strategies (i.e., more avoidance, less problem-solving, and less seeking social support) than women without a history of child maltreatment. The first analysis in which the outcome variable was avoidance was significant, $F(4, 378) = 7.86, p < .001, R^2 = .08$, although the amount of variance was small (see Table 8). However, results showed that none of the four types of child maltreatment were significantly associated with the use of more avoidance coping strategies. Both the second and third analyses in which the outcome variables were problem-solving, $F(4, 378) = 2.65, p = .03, R^2 = .03$ and seeking social support, $F(4, 378) = 2.20, p = .07, R^2 = .02$, were not significant. This indicated that the four types of child maltreatment examined in this study did not predict coping by problem-solving or seeking social support.

Table 8

Regression Analysis for Child Maltreatment Variables Predicting Avoidance Coping

Variable	<i>B</i>	<i>SE B</i>	β	R^2
				0.08
CEA	1.46	0.70	.13	
CPA	0.48	0.73	.04	
CSA	0.42	0.71	.03	
CN	1.88	0.62	.17	

Note. CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect.

$N = 383$.

Hypothesis 4: Child Maltreatment and Emotion Regulation

As stated in hypothesis #4, it was expected that women with a history of child maltreatment would use typically less effective emotion regulation skills (i.e., less cognitive reappraisal and more expressive suppression) than women without a history of child maltreatment. The analysis in which the outcome variable was cognitive reappraisal was not significant, $F(4, 378) = 0.42, p = .80, R^2 < .01$. Similarly, the analysis in which the outcome variable was expressive suppression was not significant, $F(4, 378) = 1.53, p = .19, R^2 = .02$. This indicated that none of these four types of child maltreatment predicted the emotion regulation strategies examined in the current study.

Hypothesis 5 and 6: Coping and Emotions Regulation Strategies and Substance Use

To examine whether women who use what are typically considered as less effective coping and emotion regulation strategies engaged in greater levels of substance use than women with more adaptive coping and emotion regulation skills, all three types of coping and both types of emotion regulation strategies were entered for each substance use variable. Despite the amount of variance being small, the analysis assessing problematic drug use was significant, $F(5, 377) = 4.71, p < .001, R^2 = .06$ (see Table 9). In addition, women who had greater avoidance coping also engaged in greater levels of problematic drug use. The regression assessing problematic alcohol use was also significant,

$F(5, 377) = 5.99, p < .001, R^2 = .07$, although the amount of variance was again small (see Table 10).

However, results showed that none of the specific coping and emotion regulation strategies were significantly associated with greater problematic alcohol use.

Table 9

Regression Analysis for Coping and Emotion Regulation Variables Predicting Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2
				0.06
Problem-Solving	0.01	0.02	.03	
Seeking Social Support	-0.01	0.02	-.04	
Avoidance	0.07	0.02	.25***	
Cognitive Reappraisal	0.05	0.07	.04	
Expressive Suppression	-0.09	0.07	-.07	

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

$N = 383$.

Table 10

Regression Analysis for Coping and Emotion Regulation Variables Predicting Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2
				0.07
Problem-Solving	-0.15	0.06	-.16	
Seeking Social Support	0.11	0.06	.11	
Avoidance	-0.13	0.06	.11	
Cognitive Reappraisal	0.05	0.27	-.03	
Expressive Suppression	0.84	0.24	.18	

Note. $N = 383$.

Hypothesis 7 and 8: Coping and Emotions Regulation Strategies and Eating Disorder Symptoms

To assess the 7th and 8th hypotheses that predicted women who use typically less effective coping and emotion regulation strategies would report more eating disorder symptoms than women with more adaptive coping and emotion regulation skills, all three types of coping and both types of and emotion regulation strategies were entered for each eating disorder variable. The analysis assessing dieting was significant, $F(5, 377) = 6.82, p < .001, R^2 = .08$ (with a small amount of variance) and women who used greater avoidance coping also engaged in greater dieting (see Table 11). Likewise, the regression with bulimia and food preoccupation as the outcome variable was also significant with a small amount of variance, $F(5, 377) = 6.47, p < .001, R^2 = .08$ and women who had greater avoidance coping reported greater bulimia and food preoccupation (see Table 12). However, the analysis assessing coping and emotion regulation as predictors of oral control was not significant, $F(5, 377) = 2.98, p = .01, R^2 = .04$. This indicated that coping styles and emotion regulation strategies did not predict oral control.

Table 11

Regression Analysis for Coping and Emotion Regulation Variables Predicting Dieting

Variable	<i>B</i>	<i>SE B</i>	β	R^2
				0.08
Problem-Solving	-0.02	0.07	-.02	
Seeking Social Support	0.02	0.08	0.02	
Avoidance	0.30	0.07	.22***	
Cognitive Reappraisal	-0.47	0.34	-.07	
Expressive Suppression	0.68	0.31	.11	

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

$N = 383$.

Table 12

Regression Analysis for Coping and Emotion Regulation Variables Predicting Bulimia and Food Preoccupation

Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²
				0.08
Problem-Solving	-0.04	0.03	-.07	
Seeking Social Support	0.04	0.03	0.07	
Avoidance	0.12	0.03	.19***	
Cognitive Reappraisal	-0.43	0.15	-.15	
Expressive Suppression	0.11	0.14	.04	

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

$N = 383$.

Analyses Assessing Child Maltreatment, Coping Strategies, Emotion Regulation Strategies, and Key Dependent Variables

Prior to running the moderation analyses, regressions were run with all four types of child maltreatment, all three types of coping strategies, and both emotion regulation strategies entered in the same step, for each of the following dependent variables: eating disorder severity total, problem drug use, and problem alcohol use. These analyses assessed which types of child maltreatment, coping strategies, and emotion regulation strategies made a unique contribution to eating disorder severity and problem substance use when all variables are entered into the same model.

Child maltreatment, coping strategies, emotion regulation strategies, and eating disorder severity total. For the first analysis, all four types of child maltreatment, three types of coping strategies, and both emotion regulation strategies were entered with total eating disorder symptoms entered as the dependent variable. The analysis was significant, $F(9, 373) = 4.79, p < .001, R^2 = .10$, however there was only a small amount of variance and only avoidance coping made a unique (but small) contribution to eating disorder severity with women who used more avoidance having greater severity of eating disorder symptoms (see Table 13).

Table 13

Regression Analysis for Child Maltreatment and Coping Variables Predicting Eating Disorder Symptoms

Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²
				0.10
CEA	2.25	1.51	.09	
CPA	0.99	1.57	.04	
CSA	1.21	1.54	.04	
CN	-1.82	1.35	-.08	
Problem-Solving	-0.10	0.11	-.05	
Seeking Social Support	0.07	0.12	.04	
Avoidance	0.45	0.12	.20***	
Cognitive Reappraisal	-0.91	0.55	-.09	
Expressive Suppression	1.23	0.50	.13	

Note. CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect.

*** $p < .001$.

$N = 383$.

Child maltreatment, coping strategies, emotion regulation strategies, and problem drug use. To examine which types of child maltreatment, coping strategies, and emotion regulation strategies made a unique contribution to problem drug use, all four types of child maltreatment, three types of coping strategies, and both types of emotion regulation strategies were entered with problematic drug use entered as the dependent variable. The analysis was significant, $F(9, 373) = 5.82, p < .001, R^2 = .12$ (however the amount of variance was small), with CSA and avoidance coping each making a unique (but small) contribution to problematic drug use severity (i.e., women with CSA and avoidance had greater severity of problematic drug use; see Table 14).

Table 14

Regression Analysis for Child Maltreatment and Coping Variables Predicting Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²
				0.12
CEA	0.47	0.20	.14	
CPA	-0.03	0.21	-.01	
CSA	0.78	0.20	.20***	
CN	-0.07	0.18	-.02	
Problem-Solving	<0.01	0.02	<-.01	
Seeking Social Support	-0.01	0.02	-.05	
Avoidance	0.06	0.02	.21***	
Cognitive Reappraisal	0.06	0.07	.04	
Expressive Suppression	-0.07	0.07	-.06	

Note. CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect.

*** $p < .001$.

$N = 383$.

Child maltreatment, coping strategies, emotion regulation strategies, and problem alcohol

use. To examine which types of child maltreatment and coping strategies made a unique contribution to problematic alcohol use, all four types of child maltreatment, three types of coping strategies, and both types of emotion regulation strategies were entered with problematic alcohol use entered as the dependent variable. The analysis was significant, however the amount of variance was small, $F(9, 373) = 5.25, p < .001, R^2 = .11$ (see Table 15). Results showed that women with more expressive suppression engaged in greater problematic alcohol use (despite this association being small).

Table 15

Regression Analysis for Child Maltreatment and Coping Variables Predicting Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²
				0.11
CEA	0.35	0.73	.03	
CPA	1.25	0.75	.09	
CSA	2.17	0.74	.15	
CN	-0.48	0.65	-.04	
Problem-Solving	-0.17	0.05	-.18	
Seeking Social Support	0.10	0.06	.10	
Avoidance	0.09	0.06	.08	
Cognitive Reappraisal	-0.11	0.26	-.02	
Expressive Suppression	0.88	0.24	.19***	

Note. CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect.

*** $p < .001$.

$N = 383$.

Moderation Analyses

In order to assess whether coping style moderated the relations between CM total and eating disorder symptoms, CM total and problem substance use (both drugs and alcohol), as well as eating disorder symptoms and problem substance use, hierarchical multiple regressions were used. Prior to performing the moderation analyses, the following variables were centred by subtracting the mean of each variable from participants' raw scores: CM total, eating disorder symptoms, avoidance coping, problem-solving coping, seeking social support coping, cognitive reappraisal, and expressive suppression. These centred variables were used in each of the regression models testing moderation as suggested by Field (2013). In each of the analyses assessing coping as a moderator of CM total and either eating disorder symptoms or problem substance use, the CM total score (i.e., cumulative CM total score calculated using the ACE measure, by adding all four types of child maltreatment together)

and the respective coping variable (i.e., avoidance, problem-solving, or seeking social support) were entered in step 1. In step 2, an interaction term (i.e., the product of CM total and the respective coping variable) was entered. Three interaction terms were created: CM total x avoidance, CM total x problem-solving, and CM total x seeking social support. The dependent variables were eating disorder symptoms (i.e., EAT-26 total), total problematic drug use, and total problematic alcohol use. If the interaction term in step 2 was significant, support for moderation would be found (Field, 2013). Similarly, for the analyses assessing coping as a moderator of eating disorders and problem substance use, eating disorder symptoms and the respective coping variable were entered in step 1. In step 2, the appropriate interaction term (i.e., eating disorder symptoms x avoidance, eating disorder symptoms x problem-solving, and eating disorder symptoms x seeking social support) were entered. Dependent variables were total problematic drug use and total problematic alcohol use. The same procedure was used for emotion regulation as a moderator.

Coping style and emotion regulation as moderators in the relation between child maltreatment and eating disorder symptom severity. The first moderation analysis assessed the role of problem-solving coping style as a moderator in the relation between CM total and eating disorder symptoms. The analysis was not significant, $F(3, 379) = 2.88, p = .04, R^2 = .02$. Thus, problem-solving was not found to be a moderator in the relation between CM total and eating disorder symptoms.

Next, I assessed whether seeking social support coping was a moderator of CM total and eating disorder symptom severity. The analysis was not significant either, $F(3, 379) = 2.17, p = .09, R^2 = .02$, and, seeking social support was not found to be a moderator in the relation between CM total and eating disorder symptoms.

The analysis examining the role of avoidance coping as a moderator of CM total and eating disorder symptom severity was significant with a small amount of variance, $F(3, 379) = 9.67, p < .001, R^2 = .07$ and avoidance coping predicted eating disorder symptoms (see Table 16). This indicated that

women who engage in more avoidance coping reported more eating disorder symptoms, while controlling for other variables in the model. However, the interaction between CM total and avoidance did not account for a significant proportion of the variance in eating disorder symptoms above and beyond CM total, indicating that avoidance was not a moderator in the relation between CM total and eating disorder symptoms.

Table 16

Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Child Maltreatment and Eating Disorder Symptoms

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.07***
CM total	0.60	0.49	.06	
Avoidance	0.53	0.11	.24***	
Step 2				.07 (<.001)
CM total	0.60	0.49	.06	
Avoidance	0.53	0.11	.24***	
CM x Avoidance	-0.01	0.09	-.01	

Note. CM total = Child maltreatment total.

*** $p < .001$.

$N = 383$.

Following this, the analysis assessing the role of cognitive reappraisal as a moderator of CM total and eating disorder symptom severity was not significant, $F(3, 379) = 3.91, p = .01, R^2 = .03$. Thus, cognitive reappraisal was not found to be a moderator in the relation between CM total and eating disorder symptoms.

Expressive suppression was then assessed as a moderator of CM total and eating disorder symptom severity. Despite having only a small amount of variance, the analysis was significant, $F(3, 379) = 6.28, p < .001, R^2 = .05$ (see Table 17). However, none of the variables in the model significantly predicted eating disorder symptoms. Furthermore, the interaction between CM total and expressive suppression did not account for a significant proportion of the variance in eating disorder

symptoms above and beyond the CM total score, so expressive suppression was not found to be a moderator in the relation between CM total and eating disorder symptoms.

Table 17

Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Eating Disorder Symptoms

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.04***
CM total	1.15	0.48	.12	
Expressive Suppression	1.49	0.48	.16	
Step 2				.05 (.01)
CM total	1.16	0.48	.12	
Expressive Suppression	1.38	0.48	.15	
CM x Expressive Suppression	0.57	0.35	.08	

Note. CM total = Child Maltreatment total.
N = 383.

In summary, avoidance coping predicted eating disorder symptoms, however coping style and emotion regulation were not found to be moderators in the relation between CM total and eating disorder symptom severity.

Coping style and emotion regulation as moderators in the relation between child maltreatment and drug use. The first analysis assessing the role of problem-solving coping style as a moderator in the relation between CM total and problematic drug use was significant, $F(3, 379) = 8.91, p < .001, R^2 = .07$ but the amount of variance was small (see Table 18). In addition, CM total predicted problematic drug use, indicating that women who experienced greater CM total engaged in more problematic drug use, while controlling for other variables in the model. Problem-solving was not significantly related to problematic drug use (i.e., it did not contribute to the prediction of problematic drug use). Furthermore, the interaction between CM total and problem-solving did not account for a significant proportion of the variance in problematic drug use above and beyond the CM

total score, meaning that problem-solving was not found to be a moderator in the relation between CM total and problematic drug use.

Table 18

Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	$R^2 (\Delta R^2)$
Step 1				.07***
CM total	0.31	0.06	.25***	
Problem-Solving	0.01	0.01	.04	
Step 2				.07 (<.001)
CM total	0.32	0.06	.25***	
Problem-Solving	0.01	0.01	.04	
CM x Problem-Solving	<-0.01	0.01	-.01	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

Following this, the analysis assessing seeking social support coping as a moderator of CM total and problematic drug use was significant, despite having a small amount of variance, $F(3, 379) = 10.36, p < .001, R^2 = .08$ (see Table 19). In addition, similar to the previous analysis, CM total predicted problematic drug use, indicating that women who experienced greater CM total engaged in more problematic drug use, while controlling for other variables in the model. Seeking social support was not significantly related to problematic drug use (i.e., it did not contribute to the prediction of problematic drug use). Further, the interaction between CM total and seeking social support did not account for a significant proportion of the variance in problematic drug use above and beyond the CM total score. Thus, seeking social support was not found to be a moderator in the relation between CM total and problematic drug use.

Table 19

Hierarchical Multiple Regression Analysis for Seeking Social Support as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.07***
CM total	0.32	0.06	.25***	
Seeking Social Support	0.01	0.01	.04	
Step 2				.08 (.01*)
CM total	0.32	0.06	.26***	
Seeking Social Support	0.01	0.01	.04	
CM x Seeking Social Support	-0.02	0.01	-.10	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

Avoidance coping was also assessed as a moderator of CM total and problematic drug use. The analysis was significant but the amount of variance was small, $F(3, 379) = 12.84, p < .001, R^2 = .09$ (see Table 20). In addition, CM total again predicted problematic drug use but the association was small. This indicated that women with more types of CM experiences engaged in more problematic drug use, while controlling for other variables in the model; but the interaction between CM total and avoidance did not account for a significant proportion of the variance in problematic drug use above and beyond the CM total score. Thus, avoidance was not found to be a moderator in the relation between CM total and problematic drug use.

Table 20

Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.09***
CM total	0.26	0.06	.21***	
Avoidance	0.05	0.02	.17	
Step 2				.09 (<.001)
CM total	0.26	0.06	.21***	
Avoidance	0.05	0.02	.17	
CM x Avoidance	<0.001	0.01	<-.01	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

Cognitive reappraisal was then assessed as a moderator of CM total and problematic drug use.

The analysis was significant with a small amount of variance, $F(3, 379) = 9.41, p < .001, R^2 = .07$ (see Table 21). While CM total predicted problematic drug use yet again, the interaction between CM total and cognitive reappraisal did not account for a significant proportion of the variance in problematic drug use above and beyond the CM total score. Cognitive reappraisal was therefore not found to be a moderator in the relation between CM total and problematic drug use.

Table 21

Hierarchical Multiple Regression Analysis for Cognitive Reappraisal as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.07***
CM total	0.32	0.06	.25***	
Cognitive Reappraisal	0.02	0.07	.01	
Step 2				.07 (.01)
CM total	0.33	0.06	.26***	
Cognitive Reappraisal	0.04	0.07	.03	
CM x Cognitive Reappraisal	-0.07	0.05	-.07	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

The next analysis assessing the role of expressive suppression as a moderator of CM total and problematic drug use was significant, but again only had a small amount of variance, $F(3, 379) = 9.68$, $p < .001$, $R^2 = .07$ (see Table 22). Consistent with the previous analyses, CM total predicted problematic drug use, but the interaction between CM total and expressive suppression did not account for a significant proportion of the variance in problematic drug use above and beyond the CM total score. As a result, expressive suppression was not found to be a moderator in the relation between CM total and problematic drug use.

Table 22

Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.07***
CM total	0.32	0.06	.26***	
Expressive Suppression	-0.04	0.06	-.03	
Step 2				.07 (.01)
CM total	0.32	0.06	.26***	
Expressive Suppression	-0.05	0.06	-.04	
CM x Expressive Suppression	0.07	0.05	.08	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

Coping style and emotion regulation as moderators in the relation between child

maltreatment and alcohol use. The analysis assessing problem-solving coping as a moderator of CM total and total problematic alcohol use was significant, $F(3, 379) = 6.56, p < .001, R^2 = .05$ (see Table 23). Again, the amount of variance was small. In addition, CM total had a small association with problematic alcohol use, indicating that women who experienced greater CM total engaged in more problematic alcohol use, while controlling for other variables in the model. Nonetheless, the interaction between CM total and problem-solving did not account for a significant proportion of the variance in problematic alcohol use above and beyond the CM total score, indicating that problem-solving was not a moderator in the relation between CM total and problematic alcohol use.

Table 23

Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Child Maltreatment and Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.05***
CM total	0.82	0.23	.18***	
Problem-Solving	-0.14	0.05	-.14	
Step 2				.05 (<.01)
CM total	0.86	0.23	.19***	
Problem-Solving	-0.14	0.05	-.14	
CM x Problem-Solving	-0.04	0.04	-.06	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

The analysis examining seeking social support coping as a moderator of CM total and total problematic alcohol use was not significant, $F(3, 379) = 3.38, p = .02, R^2 = .03$. Thus seeking social support was not a moderator of the relation between CM total and problematic alcohol use.

Similarly, the analysis of avoidance coping as a moderator of CM total and total problematic alcohol use was not significant, $F(3, 379) = 5.09, p = .002, R^2 = .04$, indicating that, avoidance was not a moderator in the relation between CM total and problematic alcohol use.

The analysis assessing cognitive reappraisal as a moderator of CM total and total problematic alcohol use was not significant, $F(3, 379) = 4.25, p = .01, R^2 = .03$. Thus, cognitive reappraisal was not found to be a moderator in the relation between CM total and problematic alcohol use.

Following this, the analysis examining the role of expressive suppression as a moderator of CM total and total problematic alcohol use was significant with a small amount of variance, $F(3, 379) = 9.05, p < .001, R^2 = .07$. Expressive suppression had a small association with problematic alcohol use, indicating that women who use more expressive suppression engaged in more problematic alcohol use, while controlling for other variables in the model (see Table 24). Nonetheless, the interaction between

the CM total score and expressive suppression did not account for a significant proportion of the variance in problematic alcohol use above and beyond the CM total score, indicating that expressive suppression was not a moderator in the relation between CM total and problematic alcohol use.

Table 24

Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Child Maltreatment and Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	β	R^2 (ΔR^2)
Step 1				.06***
CM total	0.71	0.23	.16	
Expressive Suppression	0.89	0.23	.19***	
Step 2				.07 (<.01)
CM total	0.71	0.23	.16	
Expressive Suppression	0.85	0.23	.18***	
CM x Expressive Suppression	0.21	0.17	.06	

Note. CM total = Child Maltreatment total.

*** $p < .001$.

$N = 383$.

In summary, CM total predicted drug and problematic alcohol use, and expressive suppression also predicted problematic alcohol use. However, coping style and emotion regulation were not found to be moderators in the relation between CM total and substance use.

Coping style and emotion regulation as moderators in the relation between eating disorder symptoms and substance use. The role of problem-solving coping as a moderator of eating disorder symptom severity and problematic drug use was assessed. The analysis was not significant, $F(3, 379) = 2.26, p = .08, R^2 = .02$ and problem-solving was not found to be a moderator in the relation between eating disorder symptoms (i.e., EAT-26 total) and problematic drug use.

Next, the analysis assessing seeking social support as a moderator of eating disorder symptom severity and problematic drug use was again not significant, $F(3, 379) = 2.08, p = .10, R^2 = .02$ and

seeking social support was not found to be a moderator in the relation between EAT-26 total score and problematic drug use.

Avoidance coping as a moderator of eating disorder symptom severity and problematic drug use was then assessed. The analysis was significant despite only having a small amount of variance, $F(3, 379) = 7.64, p < .001, R^2 = .06$ (see Table 25). Avoidance predicted problematic drug use (but the association was also small), indicating that women who used more avoidance coping engaged in more problematic drug use, while controlling for other variables in the model. However, the interaction between EAT-26 total and avoidance did not account for a significant proportion of the variance in problematic drug use above and beyond avoidance total score. This indicated that avoidance was not a moderator in the relation between eating disorder symptoms and problematic drug use.

Table 25

Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Drug Use

Variable	<i>B</i>	<i>SE B</i>	β	$R^2 (\Delta R^2)$
Step 1				.06***
EAT-26	0.01	0.01	.06	
Avoidance	0.06	0.02	.21***	
Step 2				.06 (<.01)
EAT-26	0.01	0.01	.04	
Avoidance	0.06	0.02	.22***	
EAT-26 x Avoidance	<0.01	<0.01	.05	

Note. EAT-26 = Eating Attitudes Test-26.

*** $p < .001$.

$N = 383$.

When cognitive reappraisal was assessed as a moderator of eating disorder symptom severity and problematic drug use, the analysis was not found to be significant, $F(3, 379) = 1.63, p = .18, R^2 = .11$. Cognitive reappraisal therefore was not found to be a moderator in the relation between eating disorder symptoms and problematic drug use.

The analysis assessing expressive suppression as a moderator of eating disorder symptom severity and problematic drug use was not found to be significant, $F(3, 379) = 2.14, p = .10, R^2 = .02$. This indicated that expressive suppression was not found to be a moderator in the relation between eating disorder symptoms and problematic drug use.

Next, when the moderating role of problem-solving coping in the relation between eating disorder symptom severity and total problematic alcohol use was examined, the analysis was significant, $F(3, 379) = 8.84, p < .001, R^2 = .07$, but the amount of variance was still small (see Table 26). Women with more severe eating disorder symptoms engaged in more problematic alcohol use (yet this association was also small). However, the interaction between EAT-26 total and problem-solving did not account for a significant proportion of the variance in problematic alcohol use above and beyond the other variables. That is, support was not found for problem-solving as a moderator in the relation between eating disorder symptoms and problematic alcohol use.

Table 26

Hierarchical Multiple Regression Analysis for Problem-Solving as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	$R^2 (\Delta R^2)$
Step 1				.05***
EAT-26	0.10	0.02	.20***	
Problem-Solving	-0.11	0.05	-.12	
Step 2				.07 (.01*)
EAT-26	0.09	0.02	.19***	
Problem-Solving	-0.11	0.05	-.12	
EAT-26 x Problem-Solving	-0.01	<0.01	-.11	

Note. EAT-26 = Eating Attitudes Test-26.

*** $p < .001$.

$N = 383$.

Following this, I assessed seeking social support as a moderator of eating disorder symptom severity and total problematic alcohol use. The analysis was not significant, $F(3, 379) = 5.75, p =$

.001, $R^2 = .04$. As a result, seeking social support was not found to be a moderator in the relation between eating disorder symptoms and problematic alcohol use.

When avoidance coping as a moderator of eating disorder symptom severity and total problematic alcohol use was assessed, the analysis was significant with a small amount of variance, $F(3, 379) = 6.69, p < .001, R^2 = .05$ (see Table 27). However none of the variables significantly predicted problematic alcohol use, indicating that the interaction between EAT-26 total and avoidance did not account for a significant proportion of the variance in problematic alcohol use above and beyond EAT-26 total score, and that avoidance was not a moderator in the relation between eating disorder symptoms and problematic alcohol use.

Table 27

Hierarchical Multiple Regression Analysis for Avoidance as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	β	$R^2 (\Delta R^2)$
Step 1				.05***
EAT-26	0.08	0.03	.17	
Avoidance	0.11	0.05	.10	
Step 2				.05 (<.001)
EAT-26	0.09	0.03	.18	
Avoidance	0.11	0.06	.10	
EAT-26 x Avoidance	<-0.01	0.01	-.02	

Note. EAT-26 = Eating Attitudes Test-26.

*** $p < .001$.

$N = 383$

The analysis examining cognitive reappraisal as a moderator of eating disorder symptom severity and total problematic alcohol use was not significant, $F(3, 379) = 5.99, p = .001, R^2 = .05$, indicating that cognitive reappraisal was not a moderator in the relation between eating disorder symptoms and problematic alcohol use.

Finally, expressive suppression was assessed as a moderator of eating disorder symptom severity and total problematic alcohol use. The analysis was significant with a small amount of variance, $F(3, 379) = 10.15, p < .001, R^2 = .07$ (see Table 28). However none of the variables in the model significantly predicted problematic alcohol use. In addition, the interaction between EAT-26 total and expressive suppression did not account for a significant proportion of the variance in problematic alcohol use above and beyond the other variable, which showed that expressive suppression was not a moderator in the relation between eating disorder symptoms and problematic alcohol use.

Table 28

Hierarchical Multiple Regression Analysis for Expressive Suppression as a Moderator in the Relation between Eating Disorder Symptoms and Problematic Alcohol Use

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	$R^2 (\Delta R^2)$
Step 1				.07***
EAT-26	0.08	0.02	.17	
Expressive Suppression	0.78	0.23	.17	
Step 2				.07 (.01)
EAT-26	0.08	0.03	.16	
Expressive Suppression	0.75	0.23	.16	
EAT-26 x Expressive	0.03	0.02	.08	

Note. EAT-26 = Eating Attitudes Test-26.

*** $p < .001$.

$N = 383$.

In summary, avoidance predicted problematic drug use and more severe eating disorder symptoms were associated with greater problematic alcohol use. However, coping style and emotion regulation were not found to be moderators in the relation between eating disorder symptoms and substance use.

Canonical Correlation Analysis

A canonical correlation analysis was conducted using the four child maltreatment variables (i.e., CEA, CPA, CSA, and CN) as predictors of the eight long-term outcome variables (i.e., eating disorder symptoms, problematic drug use, problematic alcohol use, problem-solving coping, avoidance coping, seeking social support, cognitive reappraisal, and expressive suppression) to evaluate the multivariate shared relationship between the two variable sets (i.e., child maltreatment and long-term outcomes).

The analysis yielded four functions with squared canonical correlations (R_c^2) of .14, .05, .01, and .01 for each successive function. The full model was statistically significant, with a Wilks's λ of .801, $F(32, 1369.78) = 2.65, p < .001$ (see Table 29). For the set of four canonical functions, the overall effect size of R_c^2 was .20, which indicates that the full model explained 20% of the variance shared between the variable sets.

Table 29

Canonical Solution for Child Maltreatment Predicting Difficulties in Adulthood for Functions 1 and 2

Variable	Function 1			Function 2			
	Coef	r_s	r_s^2 (%)	Coef	r_s	r_s^2 (%)	h^2 (%)
EAT-26	.17	.35	12.25	.15	-.06	0.36	12.61
PDU (DAST-10)	.59	.79	62.41	.25	.20	4.00	66.41
PAU (AUDIT)	.19	.46	21.16	.19	.13	1.69	22.85
Problem-Solving	.35	.42	17.64	.13	.23	5.29	22.93
Social Support	-.002	.31	9.61	.38	.34	11.56	21.17
Avoidance	.38	.62	38.44	-.85	-.69	47.61	86.05
Cognitive Reappraisal	-.04	-.04	0.16	.06	.27	7.29	7.45
Expressive Suppression	-.12	-.04	0.16	-.33	-.53	28.09	28.25
R_c^2			13.63			5.17	
CEA	.57	.80	64.00	.01	-.28	7.84	71.84
CPA	.08	.53	28.09	-.23	-.28	7.84	35.93
CSA	.58	.76	57.76	.69	.47	22.09	79.85
CN	.12	.50	25.00	-.83	-.74	54.76	79.76

Note. Structure coefficients (r_s) greater than $|.45|$ are in bold. Community coefficients (h^2) greater than 45% are in bold. Coef = standardized canonical function coefficient; r_s = structure coefficient; r_s^2 = squared structure coefficient; h^2 = communality coefficient. EAT-26 = Eating Attitudes Test-26; PDU = Problematic Drug Use; DAST-10 = Drug Abuse Screening Test-10; PAU = Problematic Alcohol Use; AUDIT = Alcohol Use Disorders Identification Test; CEA = Child Emotional Abuse; CPA = Child Physical Abuse; CSA = Child Sexual Abuse; CN = Child Neglect. $N = 383$.

Although the full model (Functions 1 to 4) was statistically significant, Functions 2 to 4 [$F(21, 1068.73) = 1.35, p = .14$], 3 to 4 [$F(12, 746.00) = 0.69, p = .76$], and 4 to 4 [$F(5, 374.00) = 0.57, p = .73$] were not statistically significant. Therefore these functions did not explain a significant amount of shared variance between the variable sets.

Of the four functions (or canonical variates), only the first two functions were interpreted, as they explained 13.63% and 5.17% of the variance within their functions, respectively. The third and

fourth functions, which each explained less than 5% of the variance in their functions (1.44% and 0.75%, respectively, of the remaining variance in the variable sets after the other functions were extracted), were sufficiently weak so as to not warrant interpretation.

Only structure coefficients greater than .45 were interpreted (as suggested by Sherry & Henson, 2005). Looking at the Function 1 coefficients, the relevant criterion variables were primarily drug use and avoidance coping, with alcohol use total having made a secondary contribution to the synthetic criterion variable. All of these variables' structure coefficients had the same sign, indicating that they were all positively related.

Among the predictor variables for Function 1, CEA and CSA were the primary contributors to the predictor synthetic variable, with a secondary contribution by CPA and CN. Because the structure coefficient for CEA, CSA, CPA, and CN were all positive, they were positively related to drug use, avoidance coping, and alcohol use. These findings generally supported the theoretical expected relationships between child maltreatment and difficulties in adulthood.

Regarding Function 2, the coefficients in Table 29 suggest that the only criterion variables of relevance were avoidance coping and expressive suppression. These were positively related on this function. As for child maltreatment, CN was the dominant predictor, along with CSA again. These variables were inversely related. Looking at the structure coefficients for the entire function, CSA was negatively related to avoidance coping and expressive suppression, while CN was positively related to avoidance coping and expressive suppression. In summary, the primary set of findings indicated that all forms of child maltreatment are associated with greater avoidance and problematic drug and alcohol use, and the secondary set of findings showed that CSA survivors used less avoidance and expressive suppression, while CN survivors used more avoidance and expressive suppression.

Discussion

This study examined the links among child maltreatment (i.e., child sexual abuse, child physical abuse, child emotional abuse, and child neglect), eating disorder symptoms, problem substance use (both drugs and alcohol), coping strategies, and emotion regulation in women. This study also explored whether using more typically adaptive coping and emotion regulation strategies (such as problem solving and changing one's interpretations of a situation) would make a difference to the development and presence of eating disorder symptoms and/or problematic substance use in women with a history of child maltreatment. In addition, I examined whether using more adaptive coping and emotion regulation strategies would influence the relation between eating disorder symptoms and problematic substance use. Finally, I evaluated the unique and overlapping roles of the different types of child maltreatment as they related to eating disorder symptoms, problematic drug use, problematic alcohol use, problem-solving coping, avoidance coping, seeking social support, cognitive reappraisal, and suppression of emotions.

Contrary to expectations, none of the four types of child maltreatment examined in this study predicted eating disorder symptoms that included dieting, bulimia, food preoccupation, and self-control around eating. In addition, while women who experienced CSA engaged in greater levels of problematic drug use, CEA, CPA, CSA, and CN experiences were not associated with greater levels of problematic alcohol use in the regression analysis assessing separate forms of child maltreatment. However, women who experienced greater child maltreatment overall engaged in more problematic drug use and more problematic alcohol use, while controlling for other variables in the model. In addition, when all the key variables were analysed together, all forms of child maltreatment were associated with greater problematic drug and alcohol use. Contrary to my predictions, the four types of child maltreatment examined in this study did not predict coping by avoidance, problem-solving, or seeking social support, nor did they predict the emotion regulation strategies examined in the current study (i.e., cognitive reappraisal and expressive suppression). However, when all the key variables

were analysed together, all forms of child maltreatment were associated with greater avoidance. I also found that while women who engaged in greater avoidance coping demonstrated greater levels of problematic drug use, women who were more likely to suppress their emotions engaged in greater problematic alcohol use. Results showed that women who used greater avoidance coping engaged in greater dieting, reported greater bulimia and food preoccupation, and had greater severity of overall eating disorder symptoms. This is consistent with the literature, in which there is a well-established association between avoidance coping and eating disorders (e.g., VanBoven & Espelage, 2006; McConnell et al., 2014). However, coping styles and emotion regulation strategies did not predict self-control around eating. Findings also showed that women with more severe eating disorder symptoms engaged in more problematic alcohol use. This finding is expected as a relation between alcohol use and eating disorders has often been found in the research (e.g., Anderson, Simmons, Martens, Ferrier, & Sheehy, 2006; Barry & Piazza-Gardner, 2012; Gadalla & Piran, 2007; Peveler & Fairburn, 1990). For instance, Peveler and Fairburn (1990) suggested that having an eating disorder may particularly increase the risk of developing alcohol use problems when alcohol is used to reduce the distress and social isolation that often occur among individuals who struggle with eating disorders.

Previous literature has shown support for the moderating (but not mediating) role of coping in the links between factors such as personality traits, emotional distress, exposure to trauma (including child maltreatment), and trauma symptoms (Connor-Smith & Compas, 2002; Elzy et al., 2013). Previous literature also supports emotion regulation as a moderator in the relation between victimization experiences and biological stress responses as well as between negative life events and psychological distress (Boyes et al., 2016; Kliewer, 2016). In addition, research has found that coping efforts and emotion regulation may also impact the associations between eating disorders and substance use disorders (Khaylis et al., 2009; Luce et al., 2007). However, contrary to expectations in the current study, coping and emotion regulation were not found to influence the relations between child maltreatment and eating disorders, child maltreatment and problem substance use, as well as eating

disorders and problematic substance use. Examining the literature, it seems that no studies to date have explicitly assessed coping and emotion regulation as moderators of the relation between child maltreatment and subsequent struggles with substance use and eating disorder symptoms. However, studies have shown support for the moderating (but not mediating) role of coping in the links between other factors, including personality traits and emotional distress (Connor-Smith & Compas, 2002), trauma exposure (including child maltreatment), and trauma symptoms (e.g., feeling scared, avoiding reminders of the stressful event; Elzy, Clark, Dollard, & Hummer, 2013). Emotion regulation has also been found to be a moderator in the relation between victimization experiences (e.g., exposure to violence, such as being hit by someone or being shot) and showing a biological stress response (e.g., cortisol output; Kliewer, 2016). In addition, support has been found for emotion regulation as a moderator in the relation between negative life events (e.g., parental divorce, death of a family member) and psychological distress (e.g., difficulties such as losing sleep due to worry, being unable to concentrate, feeling unhappy or depressed, etc.; Boyes, Hasking, & Martin, 2016). There are a number of possible reasons for my study's findings, which were not as predicted. First, other factors that were not captured by my study may also influence the relation between child maltreatment and subsequent adjustment. For instance, Higgins and McCabe (2000) reported that family characteristics (e.g., family members not being close and supportive of one another, struggles among family members with adjusting to challenges and problems, and lack of physical or verbal affection expressed between the parents) have one of the most important effects on adjustment, including throughout adulthood. Additional factors that may have been important are qualitative aspects of the abusive experiences, such as age(s) when the maltreatment occurred, frequency of abuse and neglect, and who the perpetrator was (e.g., family member, other adult, etc.). For instance, I expect it would probably be the case that being abused repeatedly over many years by an attachment figure at a very young age has quite a different effect compared to having an abusive experience on one or two occasions from a non-attachment figure. Another idea is that coping and emotion regulation are actually operating as

mediators of the relations among child maltreatment, eating disorder symptoms, and problematic substance use. Since the current study found direct links among child maltreatment, coping, emotion regulation, and problematic substance use, this would suggest that there may be impaired regulatory capacities as an explanation for the links between child maltreatment and problematic substance use. It is also possible that coping and emotion regulation are operating as both mediators and moderators to a certain degree.

The finding that coping and emotion regulation were not found to influence the relations between eating disorders and problematic substance use was inconsistent with previous research indicating that coping efforts and emotion regulation may play a role in the association between eating disorders and substance use disorders (Khaylis et al., 2009; Luce et al., 2007). One possible explanation is that my study's sample tended to be young in age and relatively high functioning, and perhaps did not capture more severe eating disorders and problematic substance use (e.g., compared to a clinical sample). Perhaps in a clinical sample, it would be more likely to find that coping and emotion regulation influence the links between eating disorders and problematic substance. Furthermore, other factors on top of coping and emotion regulation may be influencing the association between eating disorders and problematic substance use, such as the presence of greater comorbid anxiety and depressive symptoms, which may make individuals even more likely to turn to substances for some relief (Khaylis et al., 2009; Thomas, Randall, & Carrigan, 2003).

When all of the variables were considered together to assess the relation between child maltreatment and long-term outcomes, I found that all forms of child maltreatment were associated with greater avoidance and problematic drug and alcohol use, and that CSA survivors used *less* avoidance and were less likely to suppress their emotions, while CN survivors used *more* avoidance and suppression of emotions. Comparing these results with previous studies, the finding that all forms of child maltreatment were associated with greater avoidance is consistent with previous studies showing that survivors of child maltreatment are more likely to use avoidance coping (e.g., Hyman,

Paliwal, & Sinha, 2007; Leitenberg, Gibson, & Novy, 2004; Milojevich et al., 2018; Shenk, Putnam, & Noll, 2012). The result that a history of child maltreatment is linked to later substance use is also consistent with the literature (Brems et al., 2004; Goldstein et al., 2010; Herrenkohl et al., 2013; Lo et al., 2008; Runtz, 2007). In addition, the finding that CN survivors used more avoidance and suppression of emotions was consistent with previous research (e.g., Hyman, Paliwal, & Sinha, 2007; Leitenberg, Gibson, & Novy, 2004; Shenk, Putnam, & Noll, 2012; Weissman et al., 2019). However, the finding that CSA survivors reported less avoidance coping and suppression of emotions was inconsistent with previous studies (e.g., Gipple et al., 2006; Marx & Sloan, 2002; Weissman et al., 2019). Please see section on Child Maltreatment, Coping, and Emotion Regulation for further details and possible explanations of these results.

Child Maltreatment and Eating Disorder Symptoms

Contrary to expectations, none of the four types of child maltreatment examined in this study predicted eating disorder symptoms that included dieting, bulimia, food preoccupation, and self-control around eating. This finding differs from numerous other studies, which found that women with a history of child maltreatment were significantly more likely to report more symptoms of eating disorders than women without a history of child maltreatment (e.g., Burns et al., 2012; Caslini et al., 2016; Johnson et al., 2002; Romans et al., 2001). One possible explanation for the current study's results is that maltreatment in childhood may be associated with greater psychological distress in general, as opposed to specifically associated with eating disorder symptoms and weight related difficulties (Grilo & Masheb, 2001). For instance, in a study examining the link between child maltreatment and eating disorder symptoms in a sample of adults with binge eating disorder, none of the types of child maltreatment examined were related to eating disorder features that included binge eating, BMI variability, concerns about eating, and over-evaluation of weight and shape (Grilo & Masheb). The only significant links found between child maltreatment and eating disorder features were that physical neglect was associated with dietary restraint in women and emotional abuse was

associated with increased body dissatisfaction. Furthermore, none of the types of child maltreatment were found to be related to the age or onset of problems related to eating or weight. Emotional abuse was, however, associated with more severe depression and poorer self-esteem. Although in the Grilo and Masheb study, the sample consisted of individuals with binge eating disorder, a similar finding was reported in a study by Folsom and colleagues (1993) examining child physical and sexual abuse among inpatients with eating disorders (i.e., anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified) and other psychiatric disorders (e.g., mood disorders, personality disorders, anxiety disorders, etc.). Findings showed that inpatients with eating disorders did not report more experiences of abuse compared to non-eating disorder inpatients. Furthermore, the eating disorder group did not report more severe abusive experiences than the psychiatric group. In addition, although no link was found between a history of abuse and eating disorder symptom severity, eating disorder inpatients with previous sexual abuse reported more severe symptoms of other disorders (e.g., OCD and anxiety) compared to participants with no history of abuse. Of note is that these two studies differ from the current study in that their results were based on clinical patients or individuals diagnosed with eating disorders whereas the current sample is not. Nonetheless, taken together, these findings indicate that a history of abuse may be linked with mental health struggles in general rather than specifically predictive of more severe eating disorder symptoms. The authors also suggest that there may be other relevant variables (e.g., lack of family support, negative responses to abuse disclosure, etc.) that when combined with experiences of abuse, might impact the subsequent development of negative psychological sequelae as well as eating disorder symptoms. However, further research is needed to investigate this link, as well as to examine why some survivors of abuse develop serious psychological difficulties, including eating disorders, while others do not.

Child Maltreatment and Substance Use

Regarding the links between child maltreatment and substance use, I found that women who experienced CSA engaged in greater levels of problematic drug use. Although CEA, CPA, CSA, and

CN experiences were not associated with greater levels of problematic alcohol use, women who experienced greater child maltreatment overall, engaged in more problematic drug and alcohol use, while controlling for other variables in the model. Furthermore, when all the key variables were analysed together, each of the types of child maltreatment were associated with greater problematic drug and alcohol use. The finding that a history of child maltreatment is linked to subsequent substance use is well documented in the literature (Goldstein et al., 2010; Herrenkohl et al., 2013; Lo et al., 2008; O'Sullivan et al., 2018; Runtz, 2007). For example, in their longitudinal study, Herrenkohl and colleagues compared participants with a documented history of child abuse and neglect to those with no history of maltreatment and showed that a history of abuse and neglect was associated with more severe symptoms of anxiety, depression, and substance abuse. Furthermore, the group with abusive histories was significantly more likely than the control group to have experienced lifetime alcohol problems and substance abuse symptoms, to be at increased risk for substance abuse, and to have used marijuana in the past year.

Similarly, Madruga and colleagues (2011) assessed a randomly selected sample of adults and found a strong link between maltreatment in childhood and the misuse of substances (both drugs and alcohol) in adulthood. Furthermore, they found that individuals with a history of two or more types of abusive experiences were four times more likely to use illegal drugs compared to those with no history of child maltreatment. In addition, Thornberry and colleagues (2010) found support for the causal impact of maltreatment during childhood and adolescence on drug use frequency, problem drug use, greater levels of alcohol use, and problem alcohol use, compared to those with no history of maltreatment. In order to test for causality, they used an approach called propensity score matching, in which they compared a group of adolescents who experienced maltreatment to a group of adolescents from similar backgrounds who had no histories of maltreatment. They matched individuals on various risk factors for child maltreatment, including race, ethnicity, age of their mother when they were born, neighborhood arrest rate, family socioeconomic status, parental education, parental substance use,

parental mental health symptoms, family history of maltreatment, family history of mental health problems, etc. In this way, the authors proposed that greater support for causality can be found.

The current study's finding that CSA specifically is associated with increased problematic drug use in women is consistent with previous research (e.g., Messman-Moore & Long, 2002; Mirotnick, 2014; White & Widom, 2008). For instance, Moran, Vuchinich, and Hall (2004) found that in a sample of high-school students, among those 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. In addition, Shin, Hong, and Hazen (2010) assessed adolescents recruited from different public service systems (e.g., child welfare, public school-based mental health service, etc.). They found that among adolescent girls, CSA was associated with problem substance use and greater likelihood of heavy use of multiple substances, even after adjusting for other factors such as age, ethnicity, substance use among other family members, peer substance use, psychological problems, and other types of child maltreatment (e.g., CPA and CN). In addition, the CSA survivors were found to be five times more likely to engage in heavy use of multiple drugs than non-survivors.

Taken together, these findings offer further support for the long established association between early experiences of abuse, particularly CSA, and the development of problematic substance use problems in women. One of the leading explanations of this link is self-medication theory (Hien et al., 2005; Khantzian, 1985), in which the use of substances is thought to modulate negative emotions and disturbing memories associated with abuse. Thus, substance use provides immediate short-term relief from distressing thoughts and feelings related to abuse. This may in turn reinforce behaviours that are either avoidant or that support not dealing with emotions directly due to the temporary relief that individuals experience when using these strategies (Stasiewicz & Maisto, 1993). In addition, experiences of child maltreatment may have an adverse effect on survivors' self-regulation abilities (Hien et al., 2005). This may lead to difficulties with expressing emotions, self-soothing, managing more intense emotional reactions, and controlling their behaviour (e.g., controlling impulsive

behaviours, aggressive behaviours, etc.). As poor self-regulation has been associated with an increased risk for initiating and abusing substances (Hien et al., 2005; Tarter, 2002), this can lead to long-term struggles with substance use disorders and related problems.

Child Maltreatment, Coping, and Emotion Regulation

Findings for the links among child maltreatment, coping, and emotion regulation indicated that none of the four types of child maltreatment examined in this study predicted coping by avoidance, problem-solving, or seeking social support. This was contrary to my predictions. In addition, none of the four types of child maltreatment predicted the emotion regulation strategies examined in the current study (i.e., cognitive reappraisal and expressive suppression). However, when all the key variables were analysed together (in a canonical correlation), all forms of child maltreatment were associated with greater avoidance. These findings might be the case because there are often intercorrelations among different types of maltreatment, which might influence statistical outcomes when the variables are examined in a regression analysis (Field, 2013; Sesar, Živčić-Bećirević, & Sesar, 2008). Moreover, because different forms of abuse frequently overlap, it can have an effect on variables related to long-term adjustment that are being assessed (Sesar et al., 2008).

The finding that all forms of child maltreatment were associated with greater avoidance is consistent with previous research indicating that survivors of child maltreatment are more likely to use avoidance coping (e.g., Hyman, Paliwal, & Sinha, 2007; Leitenberg, Gibson, & Novy, 2004; Milojevich et al., 2018; Shenk, Putnam, & Noll, 2012). Survivors of child maltreatment may engage in more avoidance as a way to manage any reminders or memories of their traumatic experience, as well as any increased anxiety or fear stemming from their abusive experiences (Shenk et al., 2012). The benefit of using avoidance in the short term is that it is a way to reduce their painful emotions and sensations when triggered. However the drawback of using avoidance is that in the long run it can prevent survivors from engaging in the cognitive and emotional processing of the abusive experiences

that can be a crucial part of being able to recover from such difficult experiences (Foa & Rothbaum, 1998).

Providing further support for the relation between child maltreatment and avoidance, Hyman and colleagues (2007) found that more severe child maltreatment experiences predicted increased use of avoidance coping in a sample of adults receiving treatment for drug abuse. However, similar to my findings, there was no significant association between child maltreatment and the other types of coping and emotion regulation examined (e.g., problem-focused coping, seeking social support, acceptance, positive reinterpretation, etc.). The authors indicated that experiencing child maltreatment might increase the likelihood of using avoidance coping, which in turn, is related to increased drug abuse. This might indicate that avoidance is actually a mediator of this relationship (contrary to my predictions for the current study). Nonetheless, Hyman and colleague's study highlights the need for improving coping among survivors of abuse, particularly those who struggle with addictions. In general, avoidance and problematic drug use are related because using drugs to cope with painful emotions has frequently been viewed as a type of avoidant coping in and of itself (Ullman et al., 2013). This sheds some lights on why I found these links, as people who tend to use avoidant coping may be using drugs to distract from or forget about their issues (Kuper, Gallop, & Greenfield, 2010; Ouimette, Finney, & Moos, 1999). In turn, using drugs to distract or avoid may lead to increased risk of developing drugs abuse problems.

Similarly, Leitenberg, Gibson, and Novy (2004) found in a sample of undergraduate women that those with more experiences of child maltreatment used more avoidance coping when faced with a stressful event. However, no significant relationship was found between greater cumulative experiences of maltreatment and use of engagement coping strategies (e.g., problem-solving, seeking social support, cognitive restructuring, expressing emotions) – which was also similar to my findings. This may provide support for the idea that avoidance coping can become a learned way to obtain temporary relief from negative thoughts and emotions associated with abusive experiences, and over

time can become a go-to coping mechanism used to deal with other stressful situations (Leitenberg et al., 2004). Since more cumulative experiences of maltreatment are typically associated with higher levels of distress, this may lead to greater use of avoidance coping due to survivors' natural and understandable tendency to want to escape from their painful thoughts and emotions. Furthermore, the temporary relief that avoidance provides can be very reinforcing and can increase the likelihood of continuing to use this strategy. However, the over-use of avoidance coping does not allow for cognitive and emotional processing of the abusive experiences which is important in order to be able to heal from these adverse life experiences (Foa & Rothbaum, 1998). Thus, further research is needed to explore the links among avoidance coping, distress levels associated with child maltreatment, and more recent experiences of stress (Leitenberg et al., 2004).

In addition, results from my study indicated that CSA was associated with less avoidance coping and suppression of emotions, while CN survivors reported more avoidance and were more likely to suppress their emotions. The finding that CN survivors used more avoidance and suppression of emotions was consistent with previous research (e.g., Hyman, Paliwal, & Sinha, 2007; Leitenberg, Gibson, & Novy, 2004; Shenk, Putnam, & Noll, 2012; Weissman et al., 2019). Survivors of CN may turn to these approaches because avoidance and suppressing their emotions became a go-to strategy to get temporary relief from negative thoughts and emotions associated with abusive experiences, which benefits them by reducing aversive emotions associated with any reminders of the abuse (Leitenberg et al., 2004; Shenk et al., 2012). Over time this may become one of their main coping strategies used to manage other stressful situations. However, the finding that CSA survivors reported less avoidance coping and suppression of emotions was not consistent with previous studies (e.g., Gipple et al., 2006; Marx & Sloan, 2002; Weissman et al., 2019). One possible explanation is that in my study's analysis that showed these associations, while CN was the dominant predictor and had a higher structure coefficient, the structure coefficient of CSA was barely above the threshold of being interpretable (i.e., based on Sherry and Henson's [2005] approach that only structure coefficients greater than .45 should

be interpreted, CSA's structure coefficient in my study was only .47). This may imply that this finding is not actually meaningful, which would help explain why these results were contrary to previous theories and research assessing CSA, coping, and emotion regulation.

Another possible explanation is that experiences of CSA and CN may differ in the way they impact survivors (Trickett & McBride-Chang, 1995). In particular, CSA is distinct from CN and other types of abuse in that the effects may vary depending on whether the perpetrator is a parent (or parental figure) versus another adult (Trickett & McBride-Chang). Meanwhile, CN is typically considered a form of maltreatment for which mainly the parents or principal caregivers are responsible. In the case of my study, the item assessing CSA asks about any adult "at least 5 years older" but for CN the item specifically uses the terms "family" and "parents". If participants in my sample who reported CSA tended to experience CSA by adults outside of their family, the effects of the abuse may be less severe (e.g., less long-term distress) than the effects of CN perpetrated by parents. Indeed, parental CSA is the minority of cases (e.g., in a sample of adult women, only 14.2% of CSA cases were perpetrated by a parental figure; Aakvaag, Thoresen, Wentzel-Larsen, & Dyb, 2017). Other factors may also help buffer some of the potentially damaging effects of CSA, such as family cohesion and supportiveness (Bal, De Bourdeaudhuij, Crombez, & Van Oost, 2004). If women in my sample with a history of CSA experienced less long-term distress compared to those with a history of CN, they may be more likely to use more effective coping and emotion regulation strategies than the CN survivors (Hyman et al., 2007; Trickett & McBride-Chang, 1995). In addition, Trickett and McBride-Chang proposed that another factor that may impact survivors of CN is that they are at risk of having insecure attachment patterns stemming from experiences of maltreatment from parents or caregivers (Finzi, Ram, Har-Even, Schnit, & Weizman, 2001). This may especially be the case when comparing intra familial CN survivors to CSA survivors who experienced extra familial abuse. Insecure attachment styles, in turn, are linked to avoidant coping styles (O'Connor & Elklit, 2008; Shapiro & Levendosky, 1999). Indeed, O'Connor and Elklit found that in a sample of mostly women (ranging in age between 15 and 61 years old),

fearful attachment style was associated with increased avoidant coping and emotional coping. Taken together, these findings may help explain why women in my sample with a history of CN, and not CSA, tended to use more avoidance and suppression of emotions. Furthermore, in a family where a child is neglected, they may learn to shut down their emotions altogether, since their needs are not being met. In the case of CSA survivors, their painful and confusing abusive experiences may lead to them being more emotionally dyscontrolled (Shipman, Zeman, Penza, & Champion, 2000).

Coping, Emotion Regulation, and Substance Use

Besides finding links between child maltreatment and avoidance coping, I found that while women who had greater avoidance coping also engaged in greater levels of problematic drug use, women who used more suppression of emotions engaged in greater problematic alcohol use. The finding that avoidance is associated with increased drug use is well supported by the literature (e.g., McConnell et al., 2014; Ullman et al., 2013). In a study by Wagner, Myers, and McIninch (1999), they examined a sample of mostly female adolescents and found that those who used more avoidance coping to deal with stress were more likely to have substance use problems. In turn, those who used more problem-solving approaches to coping with stress reported less substance use problems. However, other coping strategies examined (i.e., self-blame, wishful thinking, and seeking social support) were not related to substance use. Furthermore, participants who met DSM-IV diagnostic criteria for substance abuse reported significantly more avoidance coping than participants who did not meet criteria. Rates of problem-solving coping were not significantly different among the group with substance abuse versus no substance abuse. Wagner and colleagues proposed that this finding demonstrates the importance of the role that avoidance coping plays in the development of substance use disorders, and that increased reliance on avoidance coping to deal with stressors may especially increase risk for problem substance use.

In a more recent paper by Lyness and Koehler (2016), they measured coping behaviours, externalizing (e.g., aggression, intrusiveness, delinquent behaviour) and internalizing (e.g., anxiety,

depression, withdrawal) symptoms, and drug use in a sample of undergraduate women. Findings revealed that increased avoidance coping was associated with more internalizing and externalizing behaviours, and in turn, more externalizing behaviours were associated with greater drug use. However, problem-solving and seeking social support coping were not significantly associated with less drug use. Again this study highlights the important role of avoidance coping over and above other forms of coping in the development of drug use and problems (as well as internalizing and externalizing behaviours). Moreover, the use of drugs to cope with difficult emotions has often been considered to be a form of avoidant coping (Ullman et al., 2013). In particular, individuals who are avoidant and may be using drugs in order to distract themselves from their problems and/or stressors may be at increased risk of developing problem substance use (Kuper, Gallop, & Greenfield, 2010; Ouimette, Finney, & Moos, 1999). Because avoidant coping strategies, including the use of substances, do not modify or resolve an individual's problems, the use of avoidance over the long-term may lead to higher levels of distress and continued problematic drug use (Aebi, Giger, Plattner, Metzke, & Steinhausen, 2014). This is especially true if the individual's stressors continue to occur (e.g., the ongoing emotional aftermath of child maltreatment).

The finding in the current study that women who used more suppression of emotions engaged in greater problematic alcohol use was also supported by previous findings. In particular, a recent study by Shimkowski (2016) investigated emotion regulation and alcohol use in a sample of mostly women college students. In this study, participants were asked to rate the likelihood of drinking excessively in different situations, such as when they are angry or depressed. They found that expressive suppression was associated with self-defined excessive use of alcohol to cope with more difficult emotions (e.g., when they are feeling depressed or discouraged). They posited that those who use more suppression of emotions may tend to bottle up their emotions because they judge themselves negatively or have negative reactions (e.g., feel angry, anxious, ashamed, etc.) about feeling upset or distressed in the first place. In turn, they may resort to increased alcohol use in an attempt to reduce

their anxiety and relieve their distress (Shaver, Veilleux, & Ham 2013). Moreover, the use of alcohol to temporarily alleviate painful emotions and sensations (e.g., sadness, anger, hypervigilance, etc.) associated with psychological distress that may otherwise be viewed as overwhelming or unmanageable is consistent with self-medication theory (Briere, 2019; Hien et al., 2005; Khantzian, 1985).

In general, suppression of emotions has been linked with avoidant coping, and has been referred to as a type of avoidant emotion regulation strategy, in which both behaviours are ways to reduce the effects of unpleasant, intense, and/or stressful emotional experiences (Boden et al., 2013; Cheavens & Heiy, 2011). Therefore, the current study's findings, taken together with the previously discussed studies, highlight the importance of specifically examining avoidant coping behaviours and how they impact risk of substance use problems (Lyness & Koehler, 2016). Targeting avoidant coping in treatment for substance use problems may also be important in order to maintain recovery post-treatment, as individuals with problematic substance use who use less avoidance coping after treatment is over are more likely to maintain gains (Beutler, Moos, & Lane, 2003; Hyman et al., 2009).

Coping, Emotion Regulation, and Eating Disorders

In addition to finding that greater avoidance coping predicted greater problematic drug use (which may be used as a means of avoiding or reducing feelings of distress; Khantzian, 1985), I found that women who used more avoidance coping engaged in greater dieting, reported greater bulimia and food preoccupation, and had more severe eating disorder symptoms. However, coping styles and emotion regulation strategies did not predict self-control around eating in the current sample.

An association between avoidance coping and eating disorders has been found in a number of previous studies (e.g., Ghaderi & Scott, 2000; VanBoven & Espelage, 2006). Mas, Fusté, García-Grau, and Bados, (2015) looked at coping styles and risk for eating disorders among adolescent women aged 13 to 18 and found that avoidance was the coping strategy that was most closely associated with eating

disorder risk. This indicated that women who tend to avoid their problems and uncomfortable emotions may be more vulnerable to the development of an eating disorder.

Similarly, MacNeil, Esposito-Smythers, Mehlenbeck, and Weismore (2012) examined coping styles, coping self-efficacy (i.e., the way someone views their own ability to manage stressors and life challenges effectively), and eating disorder symptoms in an undergraduate (mostly women) sample. Results showed that those who reported more avoidance coping and more daily stressors (e.g., deadlines, financial worries, feeling lonely, etc.) also had more severe eating disorder symptoms compared to those who reported more avoidance coping but who did not experience as many everyday stressors. Thus, a link was found between coping via avoidance and increased eating disorder symptoms among those reporting greater day-to-day stress. The authors proposed that when individuals who tend to use avoidant coping strategies are unable to effectively manage their daily stressors, they may be more likely to engage in eating disorder behaviours in an effort to distract from their stressors and the subsequent emotional distress or to feel more in control when dealing with a situation that seems difficult to resolve (Bruch, 1982; Heatherton & Baumeister, 1991; MacNeil et al., 2012). Furthermore, participants with lower coping self-efficacy indicated they had more eating disorder symptoms, regardless of overall stress levels. This makes sense when we conceptualize avoidant coping as a strategy to deal with stress, while coping self-efficacy is a belief in one's own ability to cope and remains stable regardless of level of current stress. Therefore, those with low confidence in their capacity to cope with stress may use eating disorder behaviours as a way to cope.

My finding that women with more avoidance coping engaged in greater dieting and reported greater bulimia and food preoccupation was similar to that of a previous study by Coveney and Olver (2017) who examined eating disorder symptoms in a sample of predominantly women university students and staff. They found that avoidant coping strategies (e.g., behavioural disengagement, mental disengagement, denial) were associated with increased dieting, as well as greater bulimia and food preoccupation. However, they did not find associations between the different coping strategies and

self-control around eating (which was similar to my study). Together these findings suggest that better stress management and development of more adaptive coping may help improve how individuals struggling with eating disorders manage stressful events.

In order to explain the finding that self-control around eating (i.e., oral control) was not associated with coping styles and emotion regulation strategies, we can look at the findings from a study by Sim and Zeman (2006). They also hypothesized that coping and emotion regulation strategies would predict disordered eating (as assessed by the EAT-26) in adolescent women. While this hypothesis was not supported, they found that body dissatisfaction and a lack of emotional awareness were the strongest predictors of disordered eating. They therefore proposed that adolescent women who are unhappy with their bodies and struggle to identify their emotions are at greater risk of developing eating disorders symptoms. They noted that among individuals who have difficulties identifying how they are feeling, it will become inevitably harder to identify effective strategies to use to manage difficult emotions and stressful situations. As a result, they may use eating disorder behaviours as a way to soothe or cope with distress. In particular, they posited that food restriction may actually serve as a coping strategy in and of itself to reduce negative affect. Indeed, research has found that food restriction among individuals with eating disorders stimulates the release of endorphins (i.e., endogenous opioids) that reduce negative affect (e.g., improve anxiety and low mood) and is found to be reinforcing (e.g., provide a sense of well-being; Huebner, 1993). Therefore, in order to maintain this effect that feels pleasing and rewarding, they must continue to engage in restrictive eating. Conversely, by not restricting their food intake, they may experience more negative emotions such as self-loathing, disgust with their behaviour and bodies, and physical discomfort (e.g., bloating, feeling full, etc.) which act in the opposite direction and may lead to more food restriction or purging (Morris, 2011).

Altogether, findings from these studies and my own study underline areas of focus for preventative strategies involving the teaching of more effective ways of coping and regulating

emotions (e.g., labelling emotions, problem solving, cognitive restructuring) in order to decrease risk of developing eating disorders (Mas et al., 2015).

Eating Disorders and Substance Use

Not only was greater avoidance coping associated with more symptoms of eating disorders, but I also found that women with more severe eating disorder symptoms reported greater problematic alcohol use. This finding was well supported by the research, in which a relation between alcohol use and eating disorders has often been found (e.g., Anderson, Simmons, Martens, Ferrier, & Sheehy, 2006; Bahji et al., 2019; Barry & Piazza-Gardner, 2012; Peveler & Fairburn, 1990). For example, Peveler and Fairburn examined whether individuals with alcohol use disorders were more likely to have eating disorders in a sample of adult women receiving treatment for problem alcohol use. Findings revealed that more women with alcohol abuse met criteria for eating disorders than would be expected by chance if eating disorders co-existed with alcohol use disorders. They also found that of the different types of eating disorders examined (bulimia nervosa, anorexia nervosa, and eating disorder, not otherwise specified) in the sample of women with problem alcohol use, a history of anorexia nervosa was the most common. The fact that my study found similar results using a sample from the general population provides support for the idea that individuals struggling with alcohol use are more likely to struggle with eating disorders as well. Peveler and Fairburn proposed that having an eating disorder may increase the risk of developing alcohol abuse, especially when alcohol is used to ease the distress and social isolation that often occur among individuals who struggle with eating disorders.

Links have also been found between drinking motives associated with avoidance and eating disorders. For example, in a publication by Anderson and colleagues (2006), they assessed the relation between motives for using alcohol and symptoms of eating disorders in a sample of adult women. They found that drinking motives related to avoidant coping (e.g., drinking to forget your worries) significantly predicted overall eating disorder severity. In addition, they found that more severe

disordered eating was associated with increased problem alcohol use. These results add support to the idea that eating disorder behaviours and problem substance use might serve a similar purpose in individuals who struggle with both, however future studies examining the function that disordered eating serves in these populations would be important.

Clinical Relevance

In general, all of these findings suggest that clinicians assessing women with disordered eating should be aware of the increased possibility of substance use problems (particularly alcohol), and vice versa for clinicians assessing women with substance use problems (Bahji et al., 2019; Peveler & Fairburn, 1990). Findings from the current study also indicate that professionals who work with women survivors of child maltreatment should be aware of increased risk of developing substance use problems as well as less effective coping and emotion regulation strategies that may be stemming from maltreatment experiences. When working with survivors of child maltreatment, it would be helpful to use a trauma-informed care approach, which integrates the unique consequences, vulnerabilities, and health difficulties associated with trauma into the care provided to survivors (Purkey, Patel, Beckett, & Mathieu, 2018). For instance, it would be important for health care providers to ask all patients about their experiences in childhood, as this can provide crucial information and context that can help them understand their presenting problems and also inform their treatment (Purkey, Patel, & Phillips, 2018). In addition, preventative strategies and treatments for individuals with a history of child maltreatment, eating disorders, and/or problematic substance use may wish to target avoidant coping in particular, and promote the use of other more typically effective coping tools, such as problem-solving (Anderson et al., 2006). More specifically, some treatments that might be helpful include cognitive behavioural therapy (CBT) and dialectical behaviour therapy (DBT). Both approaches involve exploring and practicing more effective and healthier strategies to cope with distress and unwanted emotions as opposed to using symptoms in an effort to temporarily relieve distress and/or avoid painful emotions. For example, DBT helps clients reduce avoidance and improve emotion regulation skills, using

strategies such as learning how to understand the function of emotions and to identify emotions on a day-to-day basis, as well as teaching clients how to experience emotions mindfully, how to use problem-solving skills, and how to change certain emotions by acting opposite to emotion-based urges (Linehan, 2014). DBT also helps clients more effectively cope with stressors and urges for symptoms, using strategies such as self-soothing with the senses (e.g., soothing smells, sounds, and sights), looking at pros and cons of engaging in a problematic behaviour (e.g., bingeing, purging, or using drugs), as well as strategies to help plan ahead should they be faced with a particularly difficult or triggering situation (Linehan, 2014). Approaches such as CBT help individuals to reduce avoidance of anxiety provoking situations using strategies such as exposure and problem-solving (Barlow, 2014; Leahy & Holland, 2000). During exposure exercises, individuals gradually and repeatedly expose themselves to anxiety provoking situations (Leahy & Holland). In order to practice problem solving, individuals identify an issue to address, brainstorm all possible solutions, evaluate which option(s) they would prefer to try first, implement the solution, evaluate the outcome, and try a different solution as needed (Leahy & Holland, 2000).

Limitations

This study had a number of limitations, which may in part explain why the results were not all as predicted. First, the sample consisted only of women recruited through online data collection websites, and therefore results do not generalize to clinical samples or to participants who do not have access to the internet (Shapiro, Chandler, & Mueller, 2013). The sample also tended to be from high-income countries (e.g., Canada, USA, and United Kingdom; Gilbert et al., 2009) and have a high level of education. For instance, 86% had at least some post secondary education, compared to the rate of 54% found among adults as reported by Statistics Canada (2016). This is also much higher than in some non-Western countries, in which fewer individuals have access to post secondary education (UNESCO Institute for Statistics, 2011). Because increased exposure to maltreatment experiences have been found to be associated with less educational achievement and lower SES, the current sample

may not have captured more severe experiences of maltreatment (Boden, Horwood, & Fergusson, 2007; Gilbert et al., 2009). Another limitation is that I did not include a measure of severity of each form of maltreatment, which is relevant as severity is considered an important variable in predicting subsequent adjustment following abusive experiences (particularly for CSA).

Despite a few exceptions, the prevalence rates for the key variables examined in this study are relatively consistent with those found in the research. This offers support for the generalizability of these findings to the population from which the current sample was drawn. However, certain sample differences may have influenced the results. For example, the severity of eating disorder symptoms and problematic alcohol use in the current study were slightly higher than those reported in other studies (e.g., Doran & Lewis, 2012; Krill et al., 2016; Lavender et al., 2011), which may be due to the large proportion of younger participants (e.g., 30.29% were 25 years old or younger) in the current sample.

Another limitation is that results from crowdsourcing sites are anonymous and can be impacted by possible malingering, exaggerating, and inattentiveness, which may impact overall data quality (Chandler, Mueller, & Paolacci, 2014). Also, responses that were considered outliers or improbable values were replaced by the median for that variable (i.e., height and weight). Although this is a technique that is widely used to deal with outliers (e.g., Leikauf et al., 2017; Shilyansky et al., 2016), the inclusion of those data with recoding, as well as the inclusion of participants who provided an improbable response, may have interfered with the true patterns of the data. However, all other variables other than weight and height-related items were within the expected range for the associated measure. Furthermore, the data of individuals whose responses on these items were considered outliers were examined more closely and their other responses were acceptable and did not show any odd answers. In general, although this study used crowdsourcing sites, among more traditional subject pools there is still the potential for these same issues. In addition, many crowdsourcing sites have systems in place to help prevent or mitigate these issues. For instance, Amazon Mechanical Turk uses

a system that pre-screens participants which allows researchers to permit and refuse certain participants in order to reduce the likelihood of poorer quality data (Chandler et al., 2014). Using CrowdFlower, a researcher can reject the work of a participant so that they do not receive payment and the site also offers quality control options so that respondents must answer certain test questions in order to proceed (De Winter, Kyriakidis, Dodou, & Happee, 2015). For my study, to help ensure better quality data, I selected the highest level of CrowdFlower responders, which meant that they have been found to be responsible respondents who have accurately answered specific test questions. I also carefully examined my data for unusual response patterns and I chose to pay participants a specific amount (i.e., \$0.50) for completing the questionnaire. This amount is ideal, because if the remuneration was too high it may attract participants who are only doing it for the payment. Other studies have used this amount of compensation and successfully recruited participants for surveys similar in length (e.g., Buhrmester, Kwang, & Gosling, 2011; Qureshi, Harris, & Atkinson, 2016). Also, research suggests that paying participants at least 1 cent for each minute spent completing a survey (e.g., 30 cents for a 30-minute study) is the minimum amount of compensation needed to provide a decent response rate (Maniaci & Rogge, 2014). Furthermore, in order to ensure subjects were not completing the survey more than once so as to increase the amount earned, each Crowdfower account was only allowed to complete the survey once. In general, anonymous online studies also provide numerous advantages, including helping participants feel more comfortable answering questions about highly sensitive and potentially stigmatizing subjects (Wurtele, Simons, & Moreno, 2014).

In addition, because there appear to be significant gender differences in eating disorder symptomology (e.g., women report more body checking, body avoidance, loss of control while eating, fasting, and vomiting), prevalence rates, and risk factors, results cannot be generalized across genders (Dooley-Hash, 2013; Piran, 2010; Striegel-Moore et al., 2009). Future research is needed in this area in order to explore differences by gender. Also, my sample was mostly Caucasian, and even though differences between ethnicities were assessed for each of the key variables, it would be important for

future studies to include more racially diverse samples in order to be more representative of the general population (Cummins, Simmons, & Zane, 2005). For example, ethnic and racial differences have been found in rates and severity of child maltreatment experiences, as well as in coping strategies following the abuse (Ullman & Filipas, 2005). There have also been differences found in eating disorders among individuals of different ethnicities and races (Swanson et al., 2011). Moreover, the association between stressful or traumatic life events and problematic substance use (i.e., drugs and alcohol) has been found to vary by race as well (Broman, 2005). For instance, Broman examined white and black college students (men and women) and found that increased traumatic stress was associated with more problem alcohol use (e.g., unable to stop drinking even though they want to stop, neglecting their responsibilities due to drinking, etc.) for white students only. In addition, he only found a relation between experiences of trauma and heavy drinking episodes among white women. In my study, most of the participants identified as Caucasian (71.28%), followed by Hispanic (9.66%), and African-Canadian/African-American (8.09%). In future studies, it may be helpful to examine more equal proportions of participants of each different ethnicity in order to address possible differences across races.

Participants' answers may have been subject to recall bias or distortion, due to the retrospective and sensitive self-report nature of the questionnaires (e.g., recollections of the participants' child maltreatment-related experiences; Burns et al., 2012; Ford et al., 2014; Mills, Kisely, Alati, Strathearn, & Najman, 2016). Although previous studies indicate that recall of abusive events in adulthood is generally accurate, it may be useful for future research to include multiple methods of assessing abusive experiences (e.g., documented cases of child maltreatment and interview-rated assessments; Mills et al., 2016). Findings may also have suffered due to the potential under-reporting of problematic drinking or eating disorder symptoms by the respondents. Furthermore, because of the cross-sectional design, no causal inferences or directionality of the effects could be made from these findings (Burns et al., 2012; Oshri, Sutton, Clay-Warner, & Miller, 2015). For example, we cannot be certain whether or

not avoidant coping precedes problematic substance use or eating disorder symptoms (or vice versa). Further longitudinal studies are needed to examine how the association between child maltreatment, eating disorder symptoms, problematic substance use, coping strategies, and emotion regulation changes over time.

Finally, this study assessed coping and emotion regulation as moderators of the relation between child maltreatment and eating disorder symptoms, child maltreatment and problem substance use, and eating disorder symptoms and problem substance use. However, a limitation of the current study is that it did not assess coping and emotion regulation as mediators of these relations. It would be important to assess for this in future studies, as the current study found direct links between child maltreatment, coping, emotion regulation, and problem behaviours, which would suggest that there is evidence for impaired regulatory capacity as an explanation for the links between child maltreatment and problem behaviours (e.g., problematic drug use). These findings imply that there may indeed be support for mediation.

Future Directions

Despite these limitations, this study still provides important information regarding the associations between child maltreatment, eating disorder symptoms, problematic substance use, coping strategies, and emotion regulation. Importantly, I found that women who experienced CSA engaged in greater levels of problematic drug use and women who experienced greater child maltreatment overall engaged in more problematic drug use and more problematic alcohol use. In addition, women who tended towards using more avoidance coping engaged in greater levels of problematic drug use, engaged in greater dieting, reported greater bulimia and food preoccupation, and had greater overall severity of eating disorder symptoms. Furthermore, those with more inhibition of their emotional response to an event engaged in greater problematic alcohol use, as did those with more severe eating disorder symptoms. The use of substances and suppression of emotions can both be thought of as forms of avoidance behaviours in which individuals may engage to reduce the impact of more difficult,

intense, and stressful emotional experiences (Boden et al., 2013; Cheavens & Heij, 2011; Ullman et al., 2013). Finally, when considered together, all forms of child maltreatment were associated with greater avoidance and problematic drug and alcohol use, and CSA survivors used less avoidance and suppression of emotions, while CN survivors used more avoidance and suppression of emotions. These findings imply that health care professionals working with women survivors of child maltreatment should be aware of increased risk of developing substance use problems as well as less effective coping and emotion regulation strategies that may be stemming from maltreatment experiences. Findings also point to avenues for prevention as well as intervention for substance use and eating disorders among women. In particular, treatments for eating disorders and substance use problems may benefit from focusing on the reduction of avoidant coping strategies and may wish to work on improving individuals' approaches to coping with distress.

Prevention strategies, programs, and policies that can help to address child maltreatment may include increasing economic support to families (e.g., tax credits, financial benefits for parents, and paid work leave for parents), promoting awareness of healthy development by educating the general public, providing accessible early childhood development programs and services to communities, and educating bystanders on how to navigate situations of suspected abuse (Centers for Disease Control and Prevention, 2019). It would be important to have government funding go toward child care programs of high quality (including after school programs, summer camps, and mentoring programs) that also encourage parental involvement (Centers for Disease Control and Prevention, 2019). Policies around ensuring that parenting skills classes are widely available with little to no cost would be helpful as well (Cowan & Cowan, 2019). Here are several current examples of available programs to address these issues. There are maternity and parental benefits offered through the Government of Canada to provide financial support for parents taking time away from work to care for their newborns (Government of Canada, 2019). The Canadian government has also developed a Canada wide initiative called The National Children's Agenda, whose main focus is on healthy childhood development in order to

provide a solid foundation for a healthy life (Department of Justice Canada, 2015). There is also the Community Action Program for Children from Health Canada that provides communities with funding in order to offer services to children living in at-risk conditions such as those with experiences of maltreatment (Department of Justice Canada, 2015). In addition, the Canadian government's Family Violence Initiative aims to reduce the frequency of family violence, improve prevention by increasing public education and awareness, and support research around providing effective community services and intervention (Department of Justice Canada, 2015). For survivors of child maltreatment, as well as individuals who struggle with eating disorders and/or problematic substance use, there should be affordable services to provide support and treatment (e.g., therapy, medical care, housing support, and crisis lines; Centers for Disease Control and Prevention, 2019; Schwab-Reese, Kanuri, & Cash, 2019; Zeanah & Humphreys, 2018). Furthermore, it would be helpful to have public health policies geared toward the negative impact of social media on body image and substance use habits and increasing awareness of the damaging effects of eating disorders as well as problematic substance use (Lewallen & Behm-Morawitz, 2016; Romer & Moreno, 2017). In particular, media health literacy refers to being able to obtain information about health conveyed in different forms of media, being aware of the impact of this on health-related behaviours, being able to examine the information critically, and taking action (e.g., regarding individuals' own health behaviour or advocating about health behaviours; Levin-Zamir & Bertschi, 2018; Nutbeam, 2000). Critical media literacy is the ability to critically examine messages from the media regarding health, and use it to improve one's own health, the health of one's community, and decision-making related to health (Higgins & Begoray, 2012). It would be important, for example, to design programs promoting media health literacy and critical media literacy to help individuals (particularly adolescents) recognize the extent to which "ideal" bodies seen in the media are unrealistic and/or unhealthy, in order to reduce or prevent body dissatisfaction (Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). It would also be important for health care professionals to receive specialized training on signs, symptoms, and treatment of both eating disorders and problematic

substance use in order to detect them as early as possible and to provide effective services for those at risk (Dimoff, Sayette, & Norcross, 2017; O'brien et al., 2018).

Further research on the effects of these variables is important, as this will be helpful for designing effective treatments based on individual needs (e.g., CBT, cognitive processing therapy, DBT). For instance, future studies may wish to examine the links among child maltreatment, eating disorder symptoms, problematic use of drugs and alcohol, coping strategies, and emotion regulation variables among different populations (e.g., men, clinical populations, other cultures, LGBTQ populations, etc.). In particular, research examining the interrelations among these variables in a male sample would provide important information on the unique risk factors that may contribute to subsequent struggles with eating disorders and/or substance use problems in men. In turn, this can help inform treatment strategies that may differ depending on gender. Indeed, gender has been found to have an important impact on how people experience their eating disorder and the extent to which treatments are effective (e.g., stigma and feelings of emasculation around having an eating disorder, misdiagnosis of eating disorders in men, insufficient information about how eating disorders affect men, etc.; Thapliyal, Hay, & Conti, 2018). Future studies could also assess the neurobiological impact of child maltreatment and adverse outcomes. For example, are changes in areas such as the hippocampus, amygdala, and/or prefrontal cortex affecting the link between early adverse experience and later adverse outcomes? Furthermore, how does age of abuse or developmental stage during which the abuse took place impact neurobiological changes, which may in turn affect later mental health struggles? It would also be interesting to examine the physical health effects of these variables, especially over the long term. For example, are individuals with a history of child maltreatment, eating disorder symptoms, problematic substance use, poor coping, and/or poor emotion regulation at greater risk for health issues such as cancer, diabetes, cardiac problems, and even shorter lifespans? Another idea is to examine other moderators of the relations among child maltreatment, eating disorders, and problematic substance use, such as impulsivity and family characteristics (e.g., supportiveness,

management of family conflict, etc.) as both factors may also have an impact on long term adjustment and mental health struggles (Higgins & McCabe, 2000; Svaldi et al., 2012). It would also be informative to conduct qualitative research examining these variables, as this would enrich the findings by providing important first-hand information about context and individuals' unique experiences and perspectives. For instance, finding out an individual's reasons or motivation for using a substance could provide helpful support for the self-medication model. Individuals could also be explicitly asked whether a substance is being used as self-medication. In addition, qualitative studies can provide more context around experiences of maltreatment as well as eating disorder symptoms. This way, we can find out more about the circumstances that may lead to certain behaviours. For instance, by finding out first-hand what function someone's eating disorder behaviours are serving, we can find more effective and healthier ways to meet those needs.

In general, research exploring these issues will contribute to improving our understanding of the factors that impact those who have experienced child maltreatment. It is crucial to elucidate the factors that contribute to the association between child maltreatment and subsequent psychological adjustment (e.g., coping strategies, emotion regulation, substance use problems, and eating disorder symptoms). In turn, we can apply these findings to prevention and early intervention programs for those at-risk of problematic substance use, difficulties with coping and emotion regulation, as well as eating disorders. Helping individuals to develop healthy and effective coping and emotion regulation strategies, and preventing the development of problematic substance use problems and eating disorders, could help to reduce risk of further problems and psychopathology associated with child maltreatment later in life. More specifically, it would be important to help people cope effectively with their stressors by gradually exposing themselves to anxiety provoking experiences and problem solving difficult situations (instead of avoiding them). Exposure involves facing a feared situation or item in a step-by-step fashion and doing so repeatedly until anxiety decreases over time (Leahy & Holland, 2000). In order to help individuals cope differently with impulse-control related behaviours, DBT offers

strategies such as the STOP skill, which helps people to resist urges to act impulsively by stepping back and getting space from the situation, gathering information about the situation, and making a mindful decision about how to proceed (Linehan, 2014). In addition, it would be useful to work on building people's capacities to understand the purpose of their emotions, label their emotional experiences, and experience their emotions in a mindful way.

In conclusion, the overall goal of this research is to provide information that can be used to help improve the health and well being of child maltreatment survivors in general, and especially, those who struggle with problematic substance use and/or eating disorders. This study revealed that women who experienced greater overall child maltreatment engaged in more problematic drug use and more problematic alcohol use and women with CSA engaged in greater levels of problematic drug use. Avoidance coping was associated with greater levels of problematic drug use, dieting, bulimia and food preoccupation, and overall eating disorder symptoms. Women with more severe eating disorder symptoms and who used greater expressive suppression, also engaged in more problematic alcohol use. When considered together, all forms of child maltreatment were associated with greater avoidance and problematic drug and alcohol use, CSA survivors used less avoidance and expressive suppression, and CN survivors used more avoidance and expressive suppression. Taken together, these results suggest that survivors of child maltreatment who may be at increased risk for problematic substance use, difficulties with coping and emotion regulation, as well as eating disorders can benefit from developing healthy and effective coping and emotion regulation strategies, which may serve to prevent the development of subsequent problems and psychopathology associated with their maltreatment.

References

- Aakvaag, H. F., Thoresen, S., Wentzel-Larsen, T., & Dyb, G. (2017). Adult victimization in female survivors of childhood violence and abuse: The contribution of multiple types of violence. *Violence Against Women, 23*(13), 1601-1619.
<https://doi.org/10.1177/1077801216664427>
- Abrams, D. B., & Niaura, R. S. (1987). Social learning theory. In H. T. Blane & K. E. Leonard (Eds.), *Psychological theories of drinking and alcoholism* (pp. 131-178). New York, NY: Guilford Press.
- Aebi, M., Giger, J., Plattner, B., Metzke, C. W., & Steinhausen, H. C. (2014). Problem coping skills, psychosocial adversities and mental health problems in children and adolescents as predictors of criminal outcomes in young adulthood. *European Child & Adolescent Psychiatry, 23*(5), 283-293. doi:10.1007/s00787-013-0458-y
- Afifi, T. O., MacMillan, H. L., Boyle, M., Taillieu, T., Cheung, K., & Sareen, J. (2014). Child abuse and mental disorders in Canada. *Canadian Medical Association Journal, 186*(9), E324-E332.
 doi:10.1503 /cmaj.131792
- Afifi, T. O., Taillieu, T., Zamorski, M. A., Turner, S., Cheung, K., & Sareen, J. (2016). Association of child abuse exposure with suicidal ideation, suicide plans, and suicide attempts in military personnel and the general population in Canada. *JAMA Psychiatry, 73*(3), 229-238.
 doi:10.1001/jamapsychiatry.2015.2732
- Alcalá, H. E., von Ehrenstein, O. S., & Tomiyama, A. J. (2016). Adverse childhood experiences and use of cigarettes and smokeless tobacco products. *Journal of Community Health, 41*(5), 969-976. doi:10.1007/s10900-016-0179-5
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*(2), 217-237.
 doi:10.1016/j.cpr.2009.11.004

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders*, 4th edn. Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. Washington, D.C: American Psychiatric Association.
- Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59(5), 1066-1074.
<http://dx.doi.org/10.1037/0022-3514.59.5.1066>
- Amirkhan, J.H. (1994). Criterion validity of a coping measure. *Journal of Personality Assessment*, 62, 242-261. http://dx.doi.org/10.1207/s15327752jpa6202_6
- Amirkhan, J. H., & Marckwordt, M. (2016). Past trauma and current stress and coping: Toward a general model. *Journal of Loss and Trauma*, 1-14. doi:10.1080/01612840.2016.1182410
- Anda, R. F., Croft, J. B., Felitti, V. J., Nordenberg, D., Giles, W. H., Williamson, D. F., & Giovino, G. A. (1999). Adverse childhood experiences and smoking during adolescence and adulthood. *Journal of the American Medical Association*, 282(17), 1652-1658.
doi:10.1001/jama.282.17.1652
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174-186.
doi:10.1007/s00406-005-0624-4
- Anderson, D. A., Simmons, A. M., Martens, M. P., Ferrier, A. G., & Sheehy, M. J. (2006). The relationship between disordered eating behavior and drinking motives in college-age women. *Eating Behaviors*, 7(4), 419-422. doi:10.1016/j.eatbeh.2005.12.001
- Anstey, K. J., & Hofer, S. M. (2004). Longitudinal designs, methods and analysis in psychiatric research. *Australian and New Zealand Journal of Psychiatry*, 38(3), 93-104.
<http://dx.doi.org/10.1080/j.1440-1614.2004.01343.x>

- Arata, C. M., Langhinrichsen-Rohling, J., Bowers, D., & O'Farrill-Swails, L. (2005). Single versus multi-type maltreatment: An examination of the long-term effects of child abuse. *Journal of Aggression, Maltreatment & Trauma, 11*(4), 29-52. http://dx.doi.org/10.1300/J146v11n04_02
- Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry, 68*(7), 724-731. doi:10.1001/archgenpsychiatry.2011.74
- Auer, R., Vittinghoff, E., Yaffe, K., Künzi, A., Kertesz, S. G., Levine, D. A., ... & Glymour, M. M. (2016). Association between lifetime marijuana use and cognitive function in middle age: The Coronary Artery Risk Development in Young Adults (CARDIA) study. *The Journal of the American Medical Association Internal Medicine, 176*(3), 352-361. doi:10.1001/jamainternmed.2015.7841
- Babor, T. F., De La Fuente, J. R., Saunders, J., & Grant, M. (1992). *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary health care*. Geneva, Switzerland: Substance Abuse Department, World Health Organization.
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary care*. Geneva, Switzerland: Department of Mental Health and Substance Dependence, World Health Organization.
- Bahji, A., Mazhar, M. N., Hawken, E., Hudson, C. C., Nadkarni, P., & MacNeil, B. A. (2019). Prevalence of substance use disorder comorbidity among individuals with eating disorders: A systematic review and meta-analysis. *Psychiatry Research, 273*, 58-66. doi:10.1016/j.psychres.2019.01.007
- Bal, S., De Bourdeaudhuij, I., Crombez, G., & Van Oost, P. (2004). Differences in trauma symptoms and family functioning in intra- and extrafamilial sexually abused adolescents. *Journal of Interpersonal Violence, 19*(1), 108-123. doi:10.1177/0886260503259053

- Balzarotti, S., John, O. P., & Gross, J. J. (2010). An Italian adaptation of the Emotion Regulation Questionnaire. *European Journal of Psychological Assessment, 26*(1), 61–67.
doi:10.1027/1015-5759/a000009
- Banducci, A. N., Hoffman, E. M., Lejuez, C. W., & Koenen, K. C. (2014). The impact of childhood abuse on inpatient substance users: Specific links with risky sex, aggression, and emotion dysregulation. *Child Abuse & Neglect, 38*(5), 928-938. doi:10.1016/j.chiabu.2013.12.007
- Barlow, D. H. (Ed.). (2014). *Clinical handbook of psychological disorders: A step-by-step treatment manual*. New York: Guilford Publications.
- Barnes, P. W., & Lightsey Jr, O. R. (2005). Perceived racist discrimination, coping, stress, and life satisfaction. *Journal of Multicultural Counseling and Development, 33*(1), 48-61. <https://doi-org.ezproxy.library.uvic.ca/10.1002/j.2161-1912.2005.tb00004.x>
- Barry, A. E., & Piazza-Gardner, A. K. (2012). Drunkorexia: Understanding the co-occurrence of alcohol consumption and eating/exercise weight management behaviors. *Journal of American College Health, 60*(3), 236-243. doi:10.1080/074 48481.2011.587487
- Beutler, L. E., Moos, R. H., & Lane, G. (2003). Coping, treatment planning, and treatment outcome: discussion. *Journal of Clinical Psychology, 59*(10), 1151-1167. doi:10.1002/jclp.10216
- Blair, J., Leiker, E., Meffert, H., Aloï, J., Tyler, P., Pope, K., ... & Thornton, L. (2018). Emotion processing in youth presenting with substance use problems. *Biological Psychiatry, 83*(9), S340-S341. <https://doi.org/10.1016/j.biopsych.2018.02.875>
- Blum, A. W., Lust, K., Christenson, G., Odlaug, B. L., Redden, S. A., & Grant, J. E. (2018). Transactional sexual activity among university students: Prevalence and clinical correlates. *International Journal of Sexual Health, 30*(3), 271-280.
<https://doi.org/10.1080/19317611.2018.1491922>
- Blunch, N. (2013). *Introduction to structural equation modeling using IBM SPSS statistics and AMOS*. London: SAGE Publications, Ltd.

- Bigras, N., Godbout, N., Hébert, M., Runtz, M., & Daspe, M. È. (2015). Identity and relatedness as mediators between child emotional abuse and adult couple adjustment in women. *Child Abuse & Neglect, 50*, 85-93. doi:10.1016/j.chiabu.2015.07.009
- Boden, J. M., Horwood, L. J., & Fergusson, D. M. (2007). Exposure to childhood sexual and physical abuse and subsequent educational achievement outcomes. *Child Abuse & Neglect, 31*(10), 1101-1114. <https://doi.org/10.1016/j.chiabu.2007.03.022>
- Boden, M. T., Westermann, S., McRae, K., Kuo, J., Alvarez, J., Kulkarni, M. R., ... & Bonn-Miller, M. O. (2013). Emotion regulation and posttraumatic stress disorder: A prospective investigation. *Journal of Social and Clinical Psychology, 32*(3), 296-314. <https://doi.org/10.1521/jscp.2013.32.3.296>
- Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology, 7*, 511-535. doi:10.1146/annurev-clinpsy-032210-104526
- Boyes, M. E., Hasking, P. A., & Martin, G. (2016). Adverse life experience and psychological distress in adolescence: Moderating and mediating effects of emotion regulation and rumination. *Stress and Health, 32*(4), 402-410. doi:10.1002/smi.2635
- Brems, C., Johnson, M. E., Neal, D., & Freemon, M. (2004). Childhood abuse history and substance use among men and women receiving detoxification services. *American Journal of Drug and Alcohol Abuse, 30*, 799-821. <http://dx.doi.org/10.1081/ADA-200037546>
- Brennan, S. & Taylor-Butts, A. (2008). *Sexual assault in Canada: 2004 and 2007*. (Catalogue no. 85F0033M, no. 19). Ottawa, Ontario: Statistics Canada, Canadian Centre for Justice Statistics.
- Briere, J. (2019). *Treating risky and compulsive behavior in trauma survivors*. New York: Guilford Press.

- Briere, J., Madni, L. A., & Godbout, N. (2015). Recent suicidality in the general population: Multivariate association with childhood maltreatment and adult victimization. *Journal of Interpersonal Violence*, 1-7. doi:10.1177/0886260515584339
- Brockmeyer, T., Skunde, M., Wu, M., Bresslein, E., Rudofsky, G., Herzog, W., & Friederich, H. C. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, 55(3), 565-571.
<http://dx.doi.org/10.1016/j.comppsy.2013.12.001>
- Broman, C. L. (2005). Stress, race and substance use in college. *College Student Journal*, 39(2), 340-352.
- Bruch, H. (1982). Anorexia nervosa: Therapy and theory. *The American Journal of Psychiatry*, 139, 1531–1538. <https://doi.org/10.1176/ajp.139.12.1531>
- Buckner, J. D., Schmidt, N. B., Bobadilla, L., & Taylor, J. (2006). Social anxiety and problematic cannabis use: Evaluating the moderating role of stress reactivity and perceived coping. *Behaviour Research and Therapy*, 44(7), 1007-1015. doi:10.1016/j.brat.2005.08.002
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3-5.
<https://doi.org/10.1177%2F1745691610393980>
- Burns, E. E., Fischer, S., Jackson, J. L., & Harding, H. G. (2012). Deficits in emotion regulation mediate the relationship between childhood abuse and later eating disorder symptoms. *Child Abuse & Neglect*, 36(1), 32-39. doi:10.1016/j.chiabu.2011.08.005
- Burt, M.R., & Katz, B.L. (1987). Dimensions of recovery from rape: Focus on growth outcomes. *Journal of Interpersonal Violence*, 2, 57-81. doi:10.1177/088626087002001004
- Butt, P., Beirness, D., Gliksman, L., Paradis, C., & Stockwell, T. (2011). *Alcohol and health in Canada: A summary of evidence and guidelines for low-risk drinking*. Ottawa, ON: Canadian Centre on Substance Abuse.

- Canadian Institute for Health Information (2013). Use of hospital services for eating disorders in Canada (ISBN 978-1-77109-312-5). Retrieved from <http://www.cihi.ca>
- Carbaugh, R. J., & Sias, S. M. (2010). Comorbidity of bulimia nervosa and substance abuse: Etiologies, treatment issues, and treatment approaches. *Journal of Mental Health Counseling*, 32(2), 125-138. doi:10.17744/mehc.32.2.j72865m4159p1420
- Carlotta, D., Krueger, R. F., Markon, K. E., Borroni, S., Frera, F., Somma, A., ... & Fossati, A. (2015). Adaptive and maladaptive personality traits in high-risk gamblers. *Journal of Personality Disorders*, 29(3), 378-392. http://dx.doi.org/10.1521/pedi_2014_28_164
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267-283. <http://dx.doi.org/10.1037/0022-3514.56.2.267>
- Caslini, M., Bartoli, F., Crocamo, C., Dakanalis, A., Clerici, M., & Carrà, G. (2016). Disentangling the association between child abuse and eating disorders: A systematic review and meta-analysis. *Psychosomatic Medicine*, 78(1), 79-90. doi:10.1097/PSY.0000000000000233
- Centers for Disease Control and Prevention (2019). *Preventing Adverse Childhood Experiences: Leveraging the Best Available Evidence*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved October 21, 2019, from <https://www.cdc.gov/violenceprevention/pdf/preventingACES-508.pdf>
- Chandler, J., Mueller, P., & Paolacci, G. (2014). Nonnaïveté among Amazon Mechanical Turk workers: Consequences and solutions for behavioral researchers. *Behavior Research Methods*, 46(1), 112-130. doi:10.3758/s13428-013-0365-7
- Chapman, D. P., Wheaton, A. G., Anda, R. F., Croft, J. B., Edwards, V. J., Liu, Y., ... & Perry, G. S. (2011). Adverse childhood experiences and sleep disturbances in adults. *Sleep Medicine*, 12(8), 773-779. doi:10.1016/j.sleep.2011.03.013

- Cheavens, J. S., & Hejy, J. (2011). The differential roles of affect and avoidance in major depressive and borderline personality disorder symptoms. *Journal of Social and Clinical Psychology, 30*(5), 441-457. <https://doi.org/10.1521/jscp.2011.30.5.441>
- Chilton, M., Knowles, M., Rabinowich, J., & Arnold, K. T. (2015). The relationship between childhood adversity and food insecurity: 'It's like a bird nesting in your head'. *Public Health Nutrition, 18*(14), 2643-2653. doi:10.1017/S1368980014003036
- Chiu, G. R., Lutfey, K. E., Litman, H. J., Link, C. L., Hall, S. A., & McKinlay, J. B. (2013). Prevalence and overlap of childhood and adult physical, sexual, and emotional abuse: A descriptive analysis of results from the Boston Area Community Health (BACH) survey. *Violence and Victims, 28*(3), 381-402. <http://dx.doi.org/10.1891/0886-6708.11-043>
- Chun, C. A., Moos, R. H., & Cronkite, R. C. (2006). Culture: A fundamental context for the stress and coping paradigm. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of multicultural perspectives on stress and coping* (pp. 29-53). New York, NY: Springer.
- Clément, M. È., Bérubé, A., & Chamberland, C. (2016). Prevalence and risk factors of child neglect in the general population. *Public Health, 1-7*. <http://dx.doi.org/10.1016/j.puhe.2016.03.018>
- Cocco, K. M., & Carey, K. B. (1998). Psychometric properties of the Drug Abuse Screening Test in psychiatric outpatients. *Psychological Assessment, 10*, 408-414. <http://dx.doi.org/10.1037/1040-3590.10.4.408>
- Collin-Vézina, D., Hélie, S., & Trocmé, N. (2010). Is child sexual abuse declining in Canada? An analysis of child welfare data. *Child Abuse & Neglect, 34*(11), 807-812. doi:dx.doi.org/10.1016/j.chiabu.2010.05.004
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*(1), 87-127. doi:10.1037//0033-2909.127.1.87

- Conger, J. J. (1956). Reinforcement theory and the dynamics of alcoholism. *Quarterly Journal of Studies on Alcohol, 17*, 296-305.
- Connor-Smith, J. K., & Compas, B. E. (2002). Vulnerability to social stress: Coping as a mediator or moderator of sociotropy and symptoms of anxiety and depression. *Cognitive Therapy and Research, 26*(1), 39-55. doi:10.1023/A:1013889504101
- Connor-Smith, J. K., & Compas, B. E. (2004). Coping as a moderator of relations between reactivity to interpersonal stress, health status, and internalizing problems. *Cognitive Therapy and Research, 28*(3), 347-368. doi:10.1023/B:COTR.0000031806.25021.d5.
- Costello, E. J., Edelbrock, C. S., Duncan, M. K., & Kalas, R. (1984). *Testing of the NIMH Diagnostic Interview Schedule for Children (DISC) in a clinical population: Final report to the Center for Epidemiological Studies, NIMH*. Pittsburgh, PA: University of Pittsburgh.
- Cogle, J. R., Timpano, K. R., Sachs-Ericsson, N., Keough, M. E., & Riccardi, C. J. (2010). Examining the unique relationships between anxiety disorders and childhood physical and sexual abuse in the National Comorbidity Survey-Replication. *Psychiatry Research, 177*(1), 150-155. doi:10.1016/j.psychres.2009.03.008
- Coveney, A., & Olver, M. (2017). Defence mechanism and coping strategy use associated with self-reported eating pathology in a non-clinical sample. *Psychreg Journal of Psychology, 1*(2), 19-39.
- Cowan, C. P., & Cowan, P. A. (2019). Enhancing parenting effectiveness, fathers' involvement, couple relationship quality, and children's development: Breaking down silos in family policy making and service delivery. *Journal of Family Theory & Review, 11*(1), 92-111. doi:10.1111/jftr.12301
- Cummins, L. H., Simmons, A. M., & Zane, N. W. (2005). Eating disorders in Asian populations: A critique of current approaches to the study of culture, ethnicity, and eating disorders. *American Journal of Orthopsychiatry, 75*(4), 553-574. <https://doi.org/10.1037/0002-9432.75.4.553>

- Daepfen, J. B., Yersin, B., Landry, U., Pécoud, A., & Decrey, H. (2000). Reliability and validity of the Alcohol Use Disorders Identification Test (AUDIT) imbedded within a general health risk screening questionnaire: Results of a survey in 332 primary care patients. *Alcoholism: Clinical and Experimental Research*, *24*(5), 659-665. doi:10.1111/j.1530-0277.2000.tb02037.x
- De Winter, J. C. F., Kyriakidis, M., Dodou, D., & Happee, R. (2015). Using CrowdFlower to study the relationship between self-reported violations and traffic accidents. *Procedia Manufacturing*, *3*, 2518-2525. doi:10.1016/j.promfg.2015.07.514
- Department of Justice Canada (2011). *Child abuse: A fact sheet from the Department of Justice Canada*. Retrieved from <http://canada.justice.gc.ca/eng/pi/fv-vf/facts-info/child-enf.html#ftn1>.
- Department of Justice Canada (2015). *Protecting our children*. Retrieved from <https://www.justice.gc.ca/eng/rp-pr/cp-pm/cr-rc/dig/prot.html>.
- Dimoff, J. D., Sayette, M. A., & Norcross, J. C. (2017). Addiction training in clinical psychology: Are we keeping up with the rising epidemic? *American Psychologist*, *72*(7), 689-695. <http://dx.doi.org/10.1037/amp0000140>
- Dittrich, K., Boedeker, K., Kluczniok, D., Jaite, C., Attar, C. H., Fuehrer, D., ... & Roepke, S. (2018). Child abuse potential in mothers with early life maltreatment, borderline personality disorder and depression. *The British Journal of Psychiatry*, *213*(1), 412-418. doi:10.1192/bjp.2018.74
- Domhardt, M., Münzer, A., Fegert, J. M., & Goldbeck, L. (2015). Resilience in survivors of child sexual abuse: A systematic review of the literature. *Trauma, Violence, & Abuse*, *16*(4), 476-493. doi:10.1177/1524838014557288
- Dooley-Hash, S. (2013). Acute care of eating disorders. In L. S. Zun (Ed.), *Behavioral Emergencies for the Emergency Physician* (pp. 140-149). New York, NY: Cambridge University Press.

- Doran, J., & Lewis, C. A. (2012). Components of shame and eating disturbance among clinical and non-clinical populations. *European Eating Disorders Review*, 20(4), 265-270. doi: 10.1002/erv.1142
- Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect*, 28(7), 729-737. doi:10.1016/j.chiabu.2003.08.009
- Eadie, E., Runtz, M., Godbout, N. (2008, August). *Impact of meaning making on reproductive health following sexual trauma*. Poster presented to the American Psychological Association, Boston, MA.
- Ehring, T., & Quack, D. (2010). Emotion regulation difficulties in trauma survivors: The role of trauma type and PTSD symptom severity. *Behavior Therapy*, 41(4), 587-598. doi: 10.1016/j.beth.2010.04.004
- El-Bassel, N., Gilbert, L., Schilling, R. F., Ivanoff, A., Borne, D., & Safyer, S. F. (1996). Correlates of crack abuse among drug-using incarcerated women: Psychological trauma, social support, and coping behavior. *The American Journal of Drug and Alcohol Abuse*, 22(1), 41-56. <http://dx.doi.org/10.3109/00952999609001644>
- Elzy, M., Clark, C., Dollard, N., & Hummer, V. (2013). Adolescent girls' use of avoidant and approach coping as moderators between trauma exposure and trauma symptoms. *Journal of Family Violence*, 28(8), 763-770. doi:10.1007/s10896-013-9546-5
- Endler, N. S., & Parker, J. D. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, 58(5), 844-854. <http://dx.doi.org/10.1037/0022-3514.58.5.844>

- Esaki, N., & Larkin, H. (2013). Prevalence of adverse childhood experiences (ACEs) among child service providers. *Families in Society, 94*(1), 31-37. doi:10.1606/1044-3894.4257
- Evans, S. E., Steel, A., & DiLillo, D. (2013). Child maltreatment severity and adult trauma symptoms: Does perceived social support play a buffering role? *Child Abuse & Neglect, 37*(11), 1-20. <http://doi.org/10.1016/j.chiabu.2013.03.005>
- Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy, 41*(5), 509-528. doi:10.1016/S0005-7967(02)00088-8
- Fallon, P., Katzman, M. A., & Wooley, S. C. (1994). *Feminist perspectives on eating disorders*. New York: Guilford Press.
- Feerick, M. M., Haugaard, J. J., & Hien, D. A. (2002). Child maltreatment and adulthood violence: The contribution of attachment and drug abuse. *Child Maltreatment, 7*(3), 226-240. doi:10.1177/1077559502007003005
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245–258. doi: 10.1016/S0749-3797(98)00017-8
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (2019). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 56*(6), 774-786. <https://doi.org/10.1016/j.amepre.2019.04.001>
- Fernando, S. C., Beblo, T., Schlosser, N., Terfehr, K., Otte, C., Löwe, B., ... & Driessen, M. (2014). The impact of self-reported childhood trauma on emotion regulation in borderline personality disorder and major depression. *Journal of Trauma & Dissociation, 15*(4), 384-401. doi:10.1080/15299732.2013.863262

- Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (4th ed.). Thousand Oaks, CA: Sage.
- Filaire, E., Massart, A., Hua, J., & Scanff, C. L. (2015). Dietary intake, eating behaviors, and diurnal patterns of salivary cortisol and alpha-amylase secretion among professional young adult female tennis players. *International Journal of Sport Nutrition and Exercise Metabolism*, 25(3), 233-242. doi: 10.1123/ijsnem.2013-0265
- Finzi, R., Ram, A., Har-Even, D., Schnit, D., & Weizman, A. (2001). Attachment styles and aggression in physically abused and neglected children. *Journal of Youth and Adolescence*, 30, 769-786. <https://doi.org/10.1023/A:1012237813771>
- Fleming, J., Mullen, P. E., Sibthorpe, B., Attewell, R., & Bammer, G. (1998). The relationship between childhood sexual abuse and alcohol abuse in women: a case-control study. *Addiction*, 93(12), 1787-1798. doi:10.1046/j.1360-0443.1998.931217875
- Foa, E. B., & Rothbaum, B. O. (2001). *Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. New York: Guilford Press.
- Folsom, V., Krahn, D., Nairn, K., Gold, L., Demitrack, M. A., & Silk, K. R. (1993). The impact of sexual and physical abuse on eating disordered and psychiatric symptoms: A comparison of eating disordered and psychiatric inpatients. *International Journal of Eating Disorders*, 13(3), 249-257. [https://doi.org/10.1002/1098-108X\(199304\)13:3<249::AID-EAT2260130302>3.0.CO;2-N](https://doi.org/10.1002/1098-108X(199304)13:3<249::AID-EAT2260130302>3.0.CO;2-N)
- Fouladi, F., Mitchell, J. E., Crosby, R. D., Engel, S. G., Crow, S., Hill, L., ... & Steffen, K. J. (2015). Prevalence of alcohol and other substance use in patients with eating disorders. *European Eating Disorders Review*, 23(6), 531-536. doi:10.1002/erv.2410
- Ford, D. C., Merrick, M. T., Parks, S. E., Breiding, M. J., Gilbert, L. K., Edwards, V. J., ... & Thompson, W. W. (2014). Examination of the factorial structure of adverse childhood experiences and recommendations for three subscale scores. *Psychology of Violence*, 4(4), 432-444. <http://dx.doi.org/10.1037/a0037723>

- Fox, H. C., Axelrod, S. R., Paliwal, P., Sleeper, J., & Sinha, R. (2007). Difficulties in emotion regulation and impulse control during cocaine abstinence. *Drug and Alcohol Dependence, 89*(2-3), 298-301. doi:10.1016/j.drugalcdep.2006.12.026
- Fox, H. C., Hong, K. A., & Sinha, R. (2008). Difficulties in emotion regulation and impulse control in recently abstinent alcoholics compared with social drinkers. *Addictive Behaviors, 33*(2), 388-394. doi:10.1016/j.addbeh.2007.10.002
- Fromme, K., & Rivet, K. (1994). Young adults' coping style as a predictor of their alcohol use and response to daily events. *Journal of Youth and Adolescence, 23*(1), 85-97.
doi:10.1007/BF01537143
- Froreich, F. V., Vartanian, L. R., Grisham, J. R., & Touyz, S. W. (2016). Dimensions of control and their relation to disordered eating behaviours and obsessive-compulsive symptoms. *Journal of Eating Disorders, 4*(1), 14-23. doi:10.1186/s40337-016-0104-4
- Gadalla, T., & Piran, N. (2007). Eating disorders and substance abuse in Canadian men and women: A national study. *Eating Disorders, 15*(3), 189-203. doi:10.1080/10640260701323458
- Garner, D. M., Olmsted, M. P., Bohr, Y. & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine, 12*, 871–878.
<http://dx.doi.org/10.1017/S0033291700049163>
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41-54.
<http://dx.doi.org/10.1007/s10862-008-9102-4>.
- Ghaderi, A., & Scott, B. (2000). Coping in dieting and eating disorders: A population-based study. *Journal of Nervous Mental Disease, 188*, 273–279. <http://dx.doi.org/10.1097/00005053-200005000-00004>

- Giguère, C. É., & Potvin, S. (2017). The Drug Abuse Screening Test preserves its excellent psychometric properties in psychiatric patients evaluated in an emergency setting. *Addictive Behaviors, 64*, 165-170. <http://dx.doi.org/10.1016/j.addbeh.2016.08.042>
- Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet, 373*(9657), 68-81. doi:10.1016/S0140-6736(08)61706-7
- Gipple, D. E., Lee, S. M., & Puig, A. (2006). Coping and dissociation among female college students: Reporting childhood abuse experiences. *Journal of College Counseling, 9*(1), 33-47. <http://dx.doi.org/10.1002/j.2161-1882.2006.tb00091.x>
- Glowa, P. T., Olson, A. L., & Johnson, D. J. (2016). Screening for adverse childhood experiences in a family medicine setting: A feasibility study. *Journal of the American Board of Family Medicine, 29*(3), 303-307. doi:10.3122/jabfm.2016.03.150310
- Godbout, N., & Runtz, M. (June, 2009). *The role of meaning-making on psychological adjustment following interpersonal victimization*. Poster presented to the Canadian Psychological Association, Montreal, QC.
- Goldstein, A. L., Faulkner, B., & Wekerle, C. (2013). The relationship among internal resilience, smoking, alcohol use, and depression symptoms in emerging adults transitioning out of child welfare. *Child Abuse & Neglect, 37*(1), 22-32. <http://dx.doi.org/10.1016/j.chiabu.2012.08.007>
- Goldstein, A. L., Flett, G. L., & Wekerle, C. (2010). Child maltreatment, alcohol use and drinking consequences among male and female college students: An examination of drinking motives as mediators. *Addictive Behaviors, 35*(6), 636-639. doi:10.1016/j.addbeh.2010.02.002
- Government of Canada (2019). *EI maternity and parental benefits: What these benefits offer*. Retrieved from <https://www.canada.ca/en/services/benefits/ei/ei-maternity-parental.html>

- Graber, J. A., Brooks-Gunn, J., Paikoff, R. L., & Warren, M. P. (1994). Prediction of eating problems: An 8-year study of adolescent girls. *Developmental Psychology*, *30*(6), 823-834.
<http://dx.doi.org/10.1037/0012-1649.30.6.823>
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, *26*(1), 41-54.
<http://dx.doi.org/10.1007/s10862-008-9102-4>.
- Grilo, C. M., & Masheb, R. M. (2001). Childhood psychological, physical, and sexual maltreatment in outpatients with binge eating disorder: Frequency and associations with gender, obesity, and eating-related psychopathology. *Obesity Research*, *9*(5), 320-325.
<https://doi.org/10.1038/oby.2001.40>
- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*, 224–237. <https://doi.org/10.1037/0022-3514.74.1.224>
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*, 271– 299. <https://doi.org/10.1037/1089-2680.2.3.271>
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, *26*(1), 1-26. doi:10.1080/1047840X.2014.940781
- Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348-362. doi:10.1037/0022-3514.85.2.348
- Grunbaum, J. A., Tortolero, S., Weller, N., & Gingiss, P. (2000). Cultural, social, and intrapersonal factors associated with substance use among alternative high school students. *Addictive Behaviors*, *25*(1), 145-151. doi:10.1016/S0306-4603(99)00006-4

- Haga, S. M., Kraft, P., & Corby, E. K. (2009). Emotion regulation: Antecedents and well-being outcomes of cognitive reappraisal and expressive suppression in cross-cultural samples. *Journal of Happiness Studies*, *10*(3), 271–291. <http://dx.doi.org/10.1007/s10902-007-9080-3>.
- Han, S. Y., Cho, M. J., Won, S., Hong, J. P., Bae, J. N., Cho, S. J., ... & Chang, S. M. (2015). Sociodemographic factors and comorbidities associated with remission from alcohol dependence: Results from a Nationwide General Population Survey in Korea. *Psychiatry Investigation*, *12*(3), 316-323. <http://dx.doi.org/10.4306/pi.2015.12.3.316>
- Harrison, P. A., Fulkerson, J. A., & Beebe, T. J. (1997). Multiple substance use among adolescent physical and sexual abuse victims. *Child Abuse and Neglect*, *21*(6), 529-539.
doi:10.1016/S0145-2134(97)00013-6
- Harrop, E. N., & Marlatt, G. A. (2010). The comorbidity of substance use disorders and eating disorders in women: Prevalence, etiology, and treatment. *Addictive Behaviors*, *35*, 392–398.
doi:10.1016/j.addbeh.2009.12.016
- Hashibe, M., Morgenstern, H., Cui, Y., Tashkin, D. P., Zhang, Z. F., Cozen, W., ... & Greenland, S. (2006). Marijuana use and the risk of lung and upper aerodigestive tract cancers: Results of a population-based case-control study. *Cancer Epidemiology and Prevention Biomarkers*, *15*(10), 1829-1834. doi:10.1158/1055-9965.EPI-06-0330
- Hasking, P. A., & Oei, T. (2004). The complexity of drinking: Interactions between the cognitive and behavioural determinants of alcohol consumption. *Addiction Research & Theory*, *12*(5), 469-488. doi:10.1080/16066350410001713240
- Hassija, C. M., Garvert, D. W., & Cloitre, M. (2015). Brief report: Symptoms of PTSD, coping strategies, and social adjustment among survivors of early life interpersonal trauma. *Journal of Aggression, Maltreatment & Trauma*, *24*(5), 520-531.
<http://dx.doi.org/10.1080/10926771.2015.1029178>

- Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, *110*(1), 86-108. <http://dx.doi.org/10.1037/0033-2909.110.1.86>
- Heidelberg, N. F., & Correia, C. J. (2009). Dieting behavior and alcohol use behaviors among national eating disorders screening program participants. *Journal of Alcohol and Drug Education*, *53*(3), 53-64.
- Heleniak, C., Jenness, J. L., Vander Stoep, A., McCauley, E., & McLaughlin, K. A. (2016). Childhood maltreatment exposure and disruptions in emotion regulation: A transdiagnostic pathway to adolescent internalizing and externalizing psychopathology. *Cognitive Therapy and Research*, *40*, 394–415. doi:10.1007/s10608-015-9735-z
- Herrenkohl, T. I., Hong, S., Klika, J. B., Herrenkohl, R. C., & Russo, M. J. (2013). Developmental impacts of child abuse and neglect related to adult mental health, substance use, and physical health. *Journal of Family Violence*, *28*(2), 191-199. doi:10.1007/s10896-012-9474-9
- Hien, D., Cohen, L., & Campbell, A. (2005). Is traumatic stress a vulnerability factor for women with substance use disorders? *Clinical Psychology Review*, *25*(6), 813-823. doi:10.1016/j.cpr.2005.05.006
- Higgins, J. W., & Begoray, D. (2012). Exploring the borderlands between media and health: Conceptualizing "Critical Media Health Literacy". *Journal of Media Literacy Education*, *4*(2), 136-148.
- Higgins, D. J., & McCabe, M. P. (2000). Relationships between different types of maltreatment during childhood and adjustment in adulthood. *Child Maltreatment*, *5*(3), 261-272. <https://doi.org/10.1177/1077559500005003006>
- Hocking, E. C., Simons, R. M., & Surette, R. J. (2016). Attachment style as a mediator between childhood maltreatment and the experience of betrayal trauma as an adult. *Child Abuse & Neglect*, *52*, 94-101. doi:10.1016/j.chiabu.2016.01.001

- Holahan, C. J., Moos, R. H., Holahan, C. K., Cronkite, R. C., & Randall, P. K. (2001). Drinking to cope, emotional distress and alcohol use and abuse: A ten-year model. *Journal of Studies on Alcohol, 62*(2), 190-198. <http://dx.doi.org/10.15288/jsa.2001.62.190>
- Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*(3), 348-358. doi:10.1016/j.biopsych.2006.03.040
- Huebner, H. F. (1993). *Endorphins, eating disorders and other addictive behaviors*. New York: W. W. Norton.
- Hyman, S. M., Hong, K. I. A., Chaplin, T. M., Dabre, Z., Comegys, A. D., Kimmerling, A., & Sinha, R. (2009). A stress-coping profile of opioid dependent individuals entering naltrexone treatment: A comparison with healthy controls. *Psychology of Addictive Behaviors, 23*(4), 613-619. doi:10.1037/a0017324
- Hyman, S. M., Paliwal, P., & Sinha, R. (2007). Childhood maltreatment, perceived stress, and stress-related coping in recently abstinent cocaine dependent adults. *Psychology of Addictive Behaviors, 21*(2), 233-238. doi:10.1037/0893-164X.21.2.233
- John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*, 1301–1333. <https://doi.org/10.1111/j.1467-6494.2004.00298.x>
- Johnson, J. G., Cohen, P., Kasen, S., & Brook, J. S. (2002). Childhood adversities associated with risk for eating disorders or weight problems during adolescence or early adulthood. *American Journal of Psychiatry, 159*, 394–400. <http://dx.doi.org/10.1176/appi.ajp.159.3.394>
- Jones, L. M., & Finkelhor, D. (2010). *Updated trends in child maltreatment, 2007*. Durham, NH: Crimes against Children Research Center.
- Joormann, J., & Quinn, M. E. (2014). Cognitive processes and emotion regulation in depression. *Depression and Anxiety, 31*(4), 308-315. doi:10.1002/da.22264

- Juarascio, A., Forman, E., Timko, C. A., Butryn, M., & Goodwin, C. (2011). The development and validation of the food craving acceptance and action questionnaire (FAAQ). *Eating Behaviors, 12*(3), 182-187. doi:10.1016/j.eatbeh.2011.04.008
- Kärkkäinen, U., Mustelin, L., Raevuori, A., Kaprio, J., & Keski-Rahkonen, A. (2018). Do disordered eating behaviours have long-term health-related consequences? *European Eating Disorders Review, 26*(1), 22-28. doi:10.1002/erv.2568
- Kalokerinos, E. K., Erbas, Y., Ceulemans, E., & Kuppens, P. (2019). Differentiate to regulate: Low negative emotion differentiation is associated with ineffective use but not selection of emotion-regulation strategies. *Psychological Science, 30*(6) 863–879.
<https://doi.org/10.1177/0956797619838763>
- Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy, 44*(9), 1301-1320.
<https://doi.org/10.1016/j.brat.2005.10.003>
- Kaukinen, C., Buchanan, L., & Gover, A. R. (2015). Child abuse and the experience of violence in college dating relationships: Examining the moderating effect of gender and race. *Journal of Family Violence, 30*(8), 1079-1092. doi:10.1007/s10896-015-9731-9
- Kearney-Cooke, A., & Striegel-Moore, R. H. (1994). Treatment of childhood sexual abuse in anorexia nervosa and bulimia nervosa: A feminist psychodynamic approach. *International Journal of Eating Disorders, 15*(4), 305-319. doi:10.1002/eat.2260150402
- Keeshin, B. R., & Dubowitz, H. (2013). Childhood neglect: The role of the paediatrician. *Paediatrics & Child Health, 18*(8), e39–e43.
- Kendall-Tackett, K., & Becker-Blease, K. (2004). The importance of retrospective findings in child maltreatment research. *Child Abuse & Neglect, 28*(7), 723-727.
doi:10.1016/j.chiabu.2004.02.002

- Keyser-Marcus, L., Alvanzo, A., Rieckmann, T., Thacker, L., Sepulveda, A., Forcehimes, A., ... & Svikis, D. S. (2014). Trauma, gender, and mental health symptoms in individuals with substance use disorders. *Journal of Interpersonal Violence*, 1-22.
doi:10.1177/0886260514532523
- Khaylis, A., Trockel, M., & Taylor, C. B. (2009). Binge drinking in women at risk for developing eating disorders. *International Journal of Eating Disorders*, 42(5), 409-414.
doi:10.1002/eat.20644
- Khantzian, E. J. (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. *American Journal of Psychiatry*, 142, 1259–1264.
<http://dx.doi.org/10.1176/ajp.142.11.1259>
- Killen, J. D., Taylor, C. B., Hayward, C., Wilson, D. M., Haydel, K. F., Hammer, L. D., ... & Kraemer, H. (1994). Pursuit of thinness and onset of eating disorder symptoms in a community sample of adolescent girls: A three-year prospective analysis. *International Journal of Eating Disorders*, 16(3), 227-238. doi:10.1002/1098-108X(199411)16:3<227::AID-EAT2260160303>3.0.CO;2-L
- Klein, H., Elifson, K. W., & Sterk, C. E. (2003). Perceived temptation to use drugs and actual drug use among women. *Journal of Drug Issues*, 33(1), 161-192.
- Kliewer, W. (2016). Victimization and biological stress responses in urban adolescents: Emotion regulation as a moderator. *Journal of Youth and Adolescence*, 45(9), 1812-1823.
<https://doi.org/10.1007/s10964-015-0398-6>
- Krill, P. R., Johnson, R., & Albert, L. (2016). The prevalence of substance use and other mental health concerns among American attorneys. *Journal of Addiction Medicine*, 10(1), 46-52.
doi:10.1097/ADM.0000000000000182
- Kubany, E. S., Leisen, M. B., Kaplan, A. S., Watson, S. B., Haynes, S. N., Owens, J. A., & Burns, K. (2000). Development and preliminary validation of a brief broad-spectrum measure of trauma

exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment*, 12(2), 210-224.

<http://dx.doi.org/10.1037/1040-3590.12.2.210>

Kuper, L. E., Gallop, R., & Greenfield, S. F. (2010). Changes in coping moderate substance abuse outcomes differentially across behavioral treatment modality. *The American Journal on Addictions*, 19(6), 543-549. doi:10.1111/j.1521-0391.2010.00074.x

Laporta-Herrero, I., Jáuregui-Lobera, I., Barajas-Iglesias, B., & Santed-Germán, M. Á. (2018). Body dissatisfaction in adolescents with eating disorders. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 23(3), 339-347. doi:10.1007/s40519-016-0353-x

Lavender, J. M., Gratz, K. L., & Tull, M. T. (2011). Exploring the relationship between facets of mindfulness and eating pathology in women. *Cognitive Behaviour Therapy*, 40(3), 174-182. doi: 10.1080/16506073.2011.555485

Lazarus, R. S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering cognitive appraisal. *Journal of Abnormal and Social Psychology*, 69, 195–205.

<https://doi.org/10.1037/h0044635>

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer.

Leahy, R. L., & Holland, S. J. (2000). *Treatment plans and interventions for depression and anxiety disorders*. New York: Guilford Press.

Leahy, R. L., Tirch, D., & Napolitano, L. A. (2011). *Emotion regulation in psychotherapy: A practitioner's guide*. New York: Guilford Publications.

Lebowitz, M. S., & Dovidio, J. F. (2015). Implications of emotion regulation strategies for empathic concern, social attitudes, and helping behavior. *Emotion*, 15(2), 187-194.

doi:<http://dx.doi.org.myaccess.library.utoronto.ca/10.1037/a0038820>

Lecrubier, Y., Sheehan, D. V., Weiller, E., Amorim, P., Bonora, I., Sheehan, K. H., ... & Dunbar, G. C. (1997). The Mini International Neuropsychiatric Interview (MINI). A short diagnostic

structured interview: Reliability and validity according to the CIDI. *European Psychiatry*, 12(5), 224-231. doi:10.1016/S0924-9338(97)83296-8

Leikauf, J. E., Griffiths, K. R., Saggar, M., Hong, D. S., Clarke, S., Efron, D., ... & Williams, L. M. (2017). Identification of biotypes in Attention-Deficit/Hyperactivity Disorder, a report from a randomized, controlled trial. *Personalized Medicine in Psychiatry*. 3, 8-17.
<http://dx.doi.org/10.1016/j.pmip.2017.02.001>

Leitenberg, H., Gibson, L. E., & Novy, P. L. (2004). Individual differences among undergraduate women in methods of coping with stressful events: The impact of cumulative childhood stressors and abuse. *Child Abuse & Neglect*, 28(2), 181-192. doi:10.1016/j.chiabu.2003.08.005

Levin-Zamir, D., & Bertschi, I. (2018). Media health literacy, eHealth literacy, and the role of the social environment in context. *International Journal of Environmental Research and Public Health*, 15(8), 1643. <https://doi.org/10.3390/ijerph15081643>

Lewallen, J., & Behm-Morawitz, E. (2016). Pinterest or thinterest?: Social comparison and body image on social media. *Social Media+ Society*, 2(1), 1-9. doi: 10.1177/2056305116640559

Linehan, M. M. (1993) *Cognitive-behavioral treatment of borderline personality disorder*. New York: The Guilford Press.

Linehan, M. (2014). *DBT Skills training manual*. New York: Guilford Publications.

Lo, C. C., Kim, Y. S., & Church, W. T. (2008). The effects of victimization on drug use: A multilevel analysis. *Substance Use & Misuse*, 43(10), 1340-1361.
<http://dx.doi.org/10.1080/10826080801922157>

Locke, T. F., & Newcomb, M. (2004). Child maltreatment, parent alcohol-and drug-related problems, polydrug problems, and parenting practices: A test of gender differences and four theoretical perspectives. *Journal of Family Psychology*, 18(1), 120-134. <http://dx.doi.org/10.1037/0893-3200.18.1.120>

- Luce, K. H., Engler, P. A., & Crowther, J. H. (2007). Eating disorders and alcohol use: Group differences in consumption rates and drinking motives. *Eating Behaviors, 8*(2), 177-184. doi:10.1016/j.eatbeh.2006.04.003
- Lyness, K. P., & Koehler, A. N. (2016). Effect of coping on substance use in adolescent girls: A dyadic analysis of parent and adolescent perceptions. *International Journal of Adolescence and Youth, 21*(4), 449-461. doi:10.1080/02673843.2013.866146
- MacMillan, H. L., Tanaka, M., Duku, E., Vaillancourt, T., & Boyle, M. H. (2013). Child physical and sexual abuse in a community sample of young adults: Results from the Ontario Child Health Study. *Child Abuse & Neglect, 37*(1), 14-21. doi:10.1016/j.chiabu.2012.06.005
- MacNeil, L., Esposito-Smythers, C., Mehlenbeck, R., & Weismoore, J. (2012). The effects of avoidance coping and coping self-efficacy on eating disorder attitudes and behaviors: A stress-diathesis model. *Eating Behaviors, 13*(4), 293-296. <http://dx.doi.org/10.1016/j.eatbeh.2012.06.005>
- Madrugá, C. S., Laranjeira, R., Caetano, R., Ribeiro, W., Zaleski, M., Pinsky, I., & Ferri, C. P. (2011). Early life exposure to violence and substance misuse in adulthood-the first Brazilian national survey. *Addictive Behaviors, 36*, 251-255. doi:10.1016/j.addbeh.2010.10.011
- Magar, E. C. E., Phillips, L. H., & Hosie, J. A. (2008). Self-regulation and risk-taking. *Personality and Individual Differences, 45*(2), 153-159. <https://doi.org/10.1016/j.paid.2008.03.014>
- Maine, M. (2000). *Body wars: Making peace with women's bodies*. Carlsbad, CA: Gürze Books.
- Malecki, J., Rhodes, P., & Ussher, J. (2018). Childhood trauma and anorexia nervosa: From body image to embodiment. *Health Care for Women International, 39*(8), 936-951. doi:10.1080/07399332.2018.1443108
- Maniaci, M. R. & Rogge, R. D. (2014). Conducting research on the internet. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 443-472). New York, NY: Cambridge University Press.

- Mann, C. J. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency Medicine Journal*, *20*(1), 54-60. doi:10.1136/emj.20.1.54
- Maples, L. A., Park, S. S., Nolen, J. P., & Rosén, L. A. (2014). Resilience to childhood abuse and neglect in college students. *Journal of Aggression, Maltreatment & Trauma*, *23*(10), 1001-1019. <http://dx.doi.org/10.1080/10926771.2014.964435>
- Marx, B. P., & Sloan, D. M. (2002). The role of emotion in the psychological functioning of adult survivors of childhood sexual abuse. *Behavior Therapy*, *33*(4), 563-577. [https://doi.org/10.1016/S0005-7894\(02\)80017-X](https://doi.org/10.1016/S0005-7894(02)80017-X)
- Mas, N., Fusté, A., García-Grau, E., & Bados, A. (2015). Coping styles and vulnerability to eating disorders in adolescent girls, by age. *Terapia Psicológica*, *33*(3), 161-168. <https://doi.org/10.4067/S0718-48082015000300001>
- McCabe, S. E., Boyd, C. J., Cranford, J. A., Morales, M., & Slayden, J. (2006). A modified version of the Drug Abuse Screening Test among undergraduate students. *Journal of Substance Abuse Treatment*, *31*(3), 297-303. doi:10.1016/j.jsat.2006.04.010
- McConnell, M. M., Memetovic, J., & Richardson, C. G. (2014). Coping style and substance use intention and behavior patterns in a cohort of BC adolescents. *Addictive Behaviors*, *39*(10), 1394-1397. doi:10.1016/j.addbeh.2014.05.018
- McEwen, C., & Flouri, E. (2009). Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: The role of emotion regulation. *European Child & Adolescent Psychiatry*, *18*(4), 206-216. doi:10.1007/s00787-008-0719-3
- McGavock, L., & Spratt, T. (2012). Prevalence of adverse childhood experiences in a university population: Associations with use of social services. *British Journal of Social Work*, *44*(3), 657-674. doi:10.1093/bjsw/bcs127

- McRae, K., Rhee, S. H., Gatt, J. M., Godinez, D., Williams, L. M., & Gross, J. J. (2017). Genetic and environmental influences on emotion regulation: A twin study of cognitive reappraisal and expressive suppression. doi:<http://dx.doi.org/myaccess.library.utoronto.ca/10.1037/emo0000300>
- Mendle, J. (2014). Why puberty matters for psychopathology. *Child Development Perspectives*, 8(4), 218-222. doi:10.1111/cdep.12092
- Messman-Moore, T. L., & Bhuptani, P. H. (2017). A review of the long-term impact of child maltreatment on posttraumatic stress disorder and its comorbidities: An emotion dysregulation perspective. *Clinical Psychology: Science and Practice*, 24(2), 154-169. doi:10.1111/cpsp.12193
- Messman-Moore, T. L., & Long, P. J. (2002). Alcohol and substance use disorders as predictors of child to adult sexual revictimization in a sample of community women. *Violence and Victims*, 17, 319–340. <http://dx.doi.org/10.1891/vivi.17.3.319.33662>
- Mills, R., Kisely, S., Alati, R., Strathearn, L., & Najman, J. (2016). Self-reported and agency-notified child sexual abuse in a population-based birth cohort. *Journal of Psychiatric Research*, 74, 87-93. doi:10.1016/j.jpsychires.2015.12.021
- Mills, P., Newman, E. F., Cossar, J., & Murray, G. (2015). Emotional maltreatment and disordered eating in adolescents: Testing the mediating role of emotion regulation. *Child Abuse & Neglect*, 39, 156-166. <http://dx.doi.org/10.1016/j.chiabu.2014.05.011>
- Milojevich, H. M., Levine, L. J., Cathcart, E. J., & Quas, J. A. (2018). The role of maltreatment in the development of coping strategies. *Journal of Applied Developmental Psychology*, 54, 23-32. <https://doi.org/10.1016/j.appdev.2017.10.005>
- Mirotnick, C. (2014). *The interrelations among sexual victimization, attachment style, interpersonal relationship satisfaction, and substance use in women* (Unpublished master's thesis). University of Victoria, Victoria, BC.

- Moncrieff, J., & Farmer, R. (1998). Sexual abuse and the subsequent development of alcohol problems. *Alcohol and Alcoholism, 33*, 592–601. [http://dx.doi.org/ 592-601](http://dx.doi.org/592-601)
- Moran, P. B., Vuchinich, S., & Hall, N. K. (2004). Associations between types of maltreatment and substance use during adolescence. *Child Abuse & Neglect, 28*(5), 565-574.
doi:10.1016/j.chiabu.2003.12.002
- Morris, J. (Ed.). (2011). *ABC of eating disorders*. West Sussex: John Wiley & Sons.
- Nagata, T., Matsuyama, M., Kiriike, N., Iketani, T., & Oshima, J. (2000). Stress coping strategy in Japanese patients with eating disorders: relationship with bulimic and impulsive behaviors. *The Journal of Nervous and Mental Disease, 188*(5), 280-286. <http://dx.doi.org/10.1097/00005053-200005000-00005>
- Neighbors, C., Lindgren, K. P., Knee, C. R., Fossos, N., & DiBello, A. (2011). The influence of confidence on associations among personal attitudes, perceived injunctive norms, and alcohol consumption. *Psychology of Addictive Behaviors, 25*(4), 714-720. doi:10.1037/a0025572
- Nelson, E. C., Heath, A. C., Lynskey, M. T., Bucholz, K. K., Madden, P. A., Statham, D. J., & Martin, N. G. (2006). Childhood sexual abuse and risks for licit and illicit drug-related outcomes: A twin study. *Psychological Medicine, 36*(10), 1473-1483.
<http://dx.doi.org/10.1017/S0033291706008397>
- Ng, Z. J., Huebner, E. S., Hills, K. J., & Valois, R. F. (2018). Mediating effects of emotion regulation strategies in the relations between stressful life events and life satisfaction in a longitudinal sample of early adolescents. *Journal of School Psychology, 70*, 16-26.
<https://doi.org/10.1016/j.jsp.2018.06.001>
- Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International, 15*(3), 259-267. <https://doi.org/10.1093/heapro/15.3.259>

- O'Brien, A., McCormack, J., Hoiles, K. J., Watson, H. J., Anderson, R. A., Hay, P., & Egan, S. J. (2018). Consensus-based perspectives of pediatric inpatient eating disorder services. *International Journal of Eating Disorders, 51*(5), 401-410. doi:10.1002/eat.22857
- O'Connor, M., & Elklit, A. (2008). Attachment styles, traumatic events, and PTSD: A cross-sectional investigation of adult attachment and trauma. *Attachment & human development, 10*(1), 59-71. doi:10.1080/14616730701868597
- O'Sullivan, D., Watts, J., & Shenk, C. (2018). Child maltreatment severity, chronic substance abuse, and disability status. *Rehabilitation Psychology, 63*(2), 313-323. <http://dx.doi.org/10.1037/rep0000196>
- Ouimette, P. C., Finney, J. W., & Moos, R. H. (1999). Two-year posttreatment functioning and coping of substance abuse patients with posttraumatic stress disorder. *Psychology of Addictive Behaviors, 13*(2), 105-114. <http://dx.doi.org/10.1037/0893-164X.13.2.105>
- Oshri, A., Carlson, M. W., Kwon, J. A., Zeichner, A., & Wickrama, K. K. (2016). Developmental growth trajectories of self-esteem in adolescence: Associations with child neglect and drug use and abuse in young adulthood. *Journal of Youth and Adolescence, 1*-14. doi:10.1007/s10964-016-0483-5
- Oshri, A., Sutton, T. E., Clay-Warner, J., & Miller, J. D. (2015). Child maltreatment types and risk behaviors: Associations with attachment style and emotion regulation dimensions. *Personality and Individual Differences, 73*, 127-133. <http://dx.doi.org/10.1016/j.paid.2014.09.015>
- Park, C. L., & Levenson, M. R. (2002). Drinking to cope among college students: Prevalence, problems and coping processes. *Journal of Studies on Alcohol, 63*(4), 486-497. <http://dx.doi.org/10.15288/jsa.2002.63.486>
- Peveler, R., & Fairburn, C. (1990). Eating disorders in women who abuse alcohol. *British Journal of Addiction, 85*(12), 1633-1638. <https://doi.org/10.1111/j.1360-0443.1990.tb01653.x>

- Piran, N. (2010). A feminist perspective on risk factor research and on the prevention of eating disorders. *Eating Disorders, 18*(3), 183-198. doi:10.1080/10640261003719435
- Ports, K. A., Ford, D. C., & Merrick, M. T. (2016). Adverse childhood experiences and sexual victimization in adulthood. *Child Abuse & Neglect, 51*, 313-322. doi:10.1016/j.chiabu.2015.08.017
- Public Health Agency of Canada (2012). *Child maltreatment in Canada*. Retrieved from <https://www.canada.ca/en/public-health/services/health-promotion/stop-family-violence/prevention-resource-centre/children/child-maltreatment-canada.html#End>.
- Purkey, E., Patel, R., Beckett, T., & Mathieu, F. (2018). Primary care experiences of women with a history of childhood trauma and chronic disease: Trauma-informed care approach. *Canadian Family Physician, 64*(3), 204-211.
- Purkey, E., Patel, R., & Phillips, S. P. (2018). Trauma-informed care: Better care for everyone. *Canadian Family Physician, 64*(3), 170-172.
- Qureshi, C., Harris, E., & Atkinson, B. E. (2016). Relationships between age of females and attraction to the Dark Triad personality. *Personality and Individual Differences, 95*, 200-203. <https://doi.org/10.1016/j.paid.2016.02.047>
- Read, J. P., Colder, C. R., Merrill, J. E., Ouimette, P., White, J., & Swartout, A. (2012). Trauma and posttraumatic stress symptoms predict alcohol and other drug consequence trajectories in the first year of college. *Journal of Consulting and Clinical Psychology, 80*(3), 426-439. doi:10.1037/a0028210
- Rehm, J., Baliunas, D., Brochu, S., Fischer, B., Gnam, W., Patra, J., Popova, S., Sarnocinski-Hart, A., & Taylor, B. (2006). *The costs of substance abuse in Canada 2002*. Ottawa: Canadian Centre on Substance Abuse. Retrieved from <http://www.ccsa.ca/eng/Pages/default.aspx>

- Reid, M., Burr, J., Williams, S., & Hammersley, R. (2008). Eating disorders patients' views on their disorders and on an outpatient service: A qualitative study. *Journal of Health Psychology, 13*(7), 956-960. doi:10.1177/1359105308095070
- Romans, S. E., Gendall, K. A., Martin, J. L., & Mullen, P. E. (2001). Child sexual abuse and later disordered eating: A New Zealand epidemiological study. *International Journal of Eating Disorders, 29*(4), 380-392. doi:10.1002/eat.1034
- Romer, D., & Moreno, M. (2017). Digital media and risks for adolescent substance abuse and problematic gambling. *Pediatrics, 140*(Supplement 2), S102-S106.
<https://doi.org/10.1542/peds.2016-1758L>
- Runtz, M. (2007, June). *Child maltreatment as a risk factor for substance abuse: The role of posttraumatic stress symptoms and dissociation*. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa, ON.
- Runtz, M. G., & Schallow, J. R. (1997). Social support and coping strategies as mediators of adult adjustment following childhood maltreatment. *Child Abuse & Neglect, 21*(2), 211-226.
doi:10.1016/S0145-2134(96)00147-0
- Sanders, B., & Becker-Lausen, E. (1995). The measurement of psychological maltreatment: Early data on the Child Abuse and Trauma scale. *Child Abuse & Neglect, 19*(3), 315-323.
doi:10.1016/S0145-2134(94)00131-6
- Sarin, S., Abela, J. R. Z., & Auerbach, R. P. (2005). The response styles theory of depression: A test of specificity and causal mediation. *Cognition & Emotion, 19*(5), 751-761.
<http://dx.doi.org/10.1080/02699930441000463>
- Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption – II. *Addiction, 88*, 791–804.
doi:10.1111/j.1360-0443.1993.tb02093.x

- Scher, C. D., Forde, D. R., McQuaid, J. R., & Stein, M. B. (2004). Prevalence and demographic correlates of childhood maltreatment in an adult community sample. *Child Abuse & Neglect*, 28(2), 167-180. doi:10.1016/j.chiabu.2003.09.012
- Schwab-Reese, L., Kanuri, N., & Cash, S. (2019). Child maltreatment disclosure to a text messaging–based crisis service: Content analysis. *The Journal of Medical Internet Research mHealth and uHealth*, 7(3), e11306. doi:10.2196/11306
- Sedlak, A. J., Mettenburg, J., Basena, M., Petta, I., McPherson, K., Greene, A., & Li, S. (2010). *Fourth national incidence study of child abuse and neglect (NIS-4): Report to Congress, executive summary*. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families.
- Selin, K. H. (2003). Test-retest reliability of the alcohol use disorder identification test in a general population sample. *Alcoholism: Clinical and Experimental Research*, 27(9), 1428-1435. doi:10.1097/01.ALC.0000085633.23230.4A
- Sesar, K., Živčić-Bećirević, I., & Sesar, D. (2008). Multi-type maltreatment in childhood and psychological adjustment in adolescence: Questionnaire study among adolescents in Western Herzegovina Canton. *Croatian Medical Journal*, 49(2), 243-256. doi:10.3325/cmj.2008.2.243
- Shalit, N., Rehm, J., & Lev-Ran, S. (2019). Epidemiology of hallucinogen use in the US results from the National epidemiologic survey on alcohol and related conditions III. *Addictive Behaviors*, 89, 35-43. <https://doi.org/10.1016/j.addbeh.2018.09.020>
- Shapiro, D. N., Chandler, J., & Mueller, P. A. (2013). Using Mechanical Turk to study clinical populations. *Clinical Psychological Science*, 1(2), 213-220. doi:10.1177/2167702612469015
- Shapiro, D. L., & Levendosky, A. A. (1999). Adolescent survivors of childhood sexual abuse: The mediating role of attachment style and coping in psychological and interpersonal functioning. *Child Abuse & Neglect*, 23(11), 1175-1191. doi:10.1016/S0145-2134(99)00085-X

- Shaver, J. A., Veilleux, J. C., & Ham, L. S. (2013). Meta-emotions as predictors of drinking to cope: A comparison of competing models. *Psychology of Addictive Behaviors, 27*, 1019–1026.
doi:10.1037/a0033999
- Shenk, C. E., Putnam, F. W., & Noll, J. G. (2012). Experiential avoidance and the relationship between child maltreatment and PTSD symptoms: Preliminary evidence. *Child Abuse & Neglect, 36*(2), 118-126. doi:10.1016/j.chiabu.2011.09.012
- Sherry, A., & Henson, R. K. (2005). Conducting and interpreting canonical correlation analysis in personality research: A user-friendly primer. *Journal of Personality Assessment, 84*(1), 37-48.
doi:10.1207/s15327752jpa8401_09
- Shilyansky, C., Williams, L. M., Gyurak, A., Harris, A., Usherwood, T., & Etkin, A. (2016). Effect of antidepressant treatment on cognitive impairments associated with depression: A randomised longitudinal study. *The Lancet Psychiatry, 3*(5), 425-435. [http://dx.doi.org/10.1016/S2215-0366\(16\)00012-2](http://dx.doi.org/10.1016/S2215-0366(16)00012-2)
- Shimkowski, J. R. (2016). Consuming to cope: Investigating college students' expressive suppression as an indirect effect of family communication and drinking context. *Communication Studies, 67*(4), 419-437. <https://doi.org/10.1080/10510974.2016.1197140>
- Shin, S. H., Hong, H. G., & Hazen, A. L. (2010). Childhood sexual abuse and adolescent substance use: A latent class analysis. *Drug and Alcohol Dependence, 109*(1-3), 226-235.
<https://doi.org/10.1016/j.drugalcdep.2010.01.013>
- Shipman, K., Zeman, J., Penza, S., & Champion, K. (2000). Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development and Psychopathology, 12*(1), 47-62.
<https://doi.org/10.1017/S0954579400001036>

- Sim, L., & Zeman, J. (2006). The contribution of emotion regulation to body dissatisfaction and disordered eating in early adolescent girls. *Journal of Youth and Adolescence*, 35(2), 207-216. doi:10.1007/s10964-005-9003-8
- Skinner, H. A. (1982). The Drug Abuse Screening Test. *Addictive Behaviors*, 7, 363-371. doi:10.1016/0306-4603(82)90005-3
- Skinner, H. A. (1992). *Drug Abuse Screening Test (DAST-20) user's guide with questionnaires*. Toronto, Ontario, Canada: Centre for Addiction and Mental Health.
- Skinner, E. A., Edge, K., Altman, J., Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, 129, 216–269. doi: 10.1037/0033-2909.129.2.216
- Slade, P. (1982). Towards a functional analysis of anorexia nervosa and bulimia nervosa. *British Journal of Clinical Psychology*, 21(3), 167-179. doi:10.1111/j.2044-8260.1982.tb00549.x
- Spaccarelli, S. (1994). Stress, appraisal, and coping in child sexual abuse: a theoretical and empirical review. *Psychological Bulletin*, 116(2), 340-362. <http://dx.doi.org/10.1037/0033-2909.116.2.340>
- Stasiewicz, P. R., & Maisto, S. A. (1993). Two-factor avoidance theory: The role of negative affect in the maintenance of substance use and substance use disorder. *Behavior Therapy*, 24(3), 337-356. [https://doi.org/10.1016/S0005-7894\(05\)80210-2](https://doi.org/10.1016/S0005-7894(05)80210-2)
- Statistics Canada. (2012). *Canadian community health survey - mental health*. Retrieved from: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5015>
- Statistics Canada. (2016). *Education in Canada: Key results from the 2016 Census*. Retrieved from: <https://www150.statcan.gc.ca/n1/daily-quotidien/171129/dq171129a-eng.htm>
- Stepp, S. D., Scott, L. N., Morse, J. Q., Nolf, K. A., Hallquist, M. N., & Pilkonis, P. A. (2014). Emotion dysregulation as a maintenance factor of borderline personality disorder features. *Comprehensive Psychiatry*, 55(3), 657-666. doi:10.1016/j.comppsy.2013.11.006

- Stock, S. L., Goldberg, E., Corbett, S., & Katzman, D. K. (2002). Substance use in female adolescents with eating disorders. *Journal of Adolescent Health, 31*(2), 176-182. doi:10.1016/S1054-139X(02)00420-2
- Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Social Psychiatry and Psychiatric Epidemiology, 48*(3), 345-355. doi:10.1007/s00127-012-0549-y
- Stoltenborgh, M., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., & Alink, L. R. (2013). Cultural–geographical differences in the occurrence of child physical abuse? A meta-analysis of global prevalence. *International Journal of Psychology, 48*(2), 81-94.
<http://dx.doi.org/10.1080/00207594.2012.697165>
- Stoltenborgh, M., van IJzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: Meta-analysis of prevalence around the world. *Child Maltreatment, 16*(2), 79-101. doi: 10.1177/1077559511403920
- Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment, 80*(1), 99-103. doi: 10.1207/S15327752JPA8001_18
- Striegel-Moore, R. H., McMahon, R. P., Biro, F. M., Schreiber, G., Crawford, P. B., & Voorhees, C. (2001). Exploring the relationship between timing of menarche and eating disorder symptoms in black and white adolescent girls. *International Journal of Eating Disorders, 30*(4), 421-433. doi:10.1002/eat.1103
- Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., & Kraemer, H. C. (2009). Gender difference in the prevalence of eating disorder symptoms. *International Journal of Eating Disorders, 42*(5), 471-474. doi:10.1002/eat.20625

- Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1986). Toward an understanding of risk factors for bulimia. *American Psychologist*, *41*(3), 246-263. <http://dx.doi.org/10.1037/0003-066X.41.3.246>
- Styron, T., & Janoff-Bulman, R. (1997). Childhood attachment and abuse: Long-term effects on adult attachment, depression, and conflict resolution. *Child Abuse and Neglect*, *21*(10), 1015-1023. doi:10.1016/S0145-2134(97)00062-8
- Substance Abuse and Mental Health Services Administration. 2011. *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- Sugaya, L., Hasin, D. S., Olfson, M., Lin, K. H., Grant, B. F., & Blanco, C. (2012). Child physical abuse and adult mental health: A national study. *Journal of Traumatic Stress*, *25*(4), 384-392. doi:10.1002/jts.21719
- Svaldi, J., Griepenstroh, J., Tuschen-Caffier, B., & Ehring, T. (2012). Emotion regulation deficits in eating disorders: a marker of eating pathology or general psychopathology? *Psychiatry Research*, *197*(1-2), 103-111. doi:10.1016/j.psychres.2011.11.009
- Swanson, S. A., Crow, S. J., Le Grange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the national comorbidity survey replication adolescent supplement. *Archives of General Psychiatry*, *68*(7), 714-723. doi:10.1001/archgenpsychiatry.2011.22
- Tansill, E. C., Edwards, K. M., Kearns, M. C., Gidycz, C. A., & Calhoun, K. S. (2012). The mediating role of trauma-related symptoms in the relationship between sexual victimization and physical health symptomatology in undergraduate women. *Journal of Traumatic Stress*, *25*, 79-85. doi:10.1002/jts.21666

- Taussig, H. N., Harpin, S. B., & Maguire, S. A. (2014). Suicidality among preadolescent maltreated children in foster care. *Child Maltreatment, 19*(1), 17-26.
<http://dx.doi.org.ezproxy.library.uvic.ca/10.1177/1077559514525503>
- Thapliyal, P., Hay, P., & Conti, J. (2018). Role of gender in the treatment experiences of people with an eating disorder: A metasynthesis. *Journal of Eating Disorders, 6*(1), 18.
<https://doi.org/10.1186/s40337-018-0207-1>
- Thomas, S. E., Randall, C. L., & Carrigan, M. H. (2003). Drinking to cope in socially anxious individuals: A controlled study. *Alcoholism: Clinical and Experimental Research, 27*(12), 1937-1943. <https://doi.org/10.1097/01.ALC.0000100942.30743.8C>
- Thompson, R. J., Mata, J., Jaeggi, S. M., Buschkuhl, M., Jonides, J., & Gotlib, I. H. (2010). Maladaptive coping, adaptive coping, and depressive symptoms: Variations across age and depressive state. *Behaviour Research and Therapy, 48*(6), 459-466.
doi:10.1016/j.brat.2010.01.007
- Thornberry, T. P., Henry, K. L., Ireland, T., & Smith, C. (2010). The causal impact of childhood-limited maltreatment and adolescent maltreatment on early adult adjustment. *Journal of Adolescent Health, 49*, 359-365. doi:10.1016/j.jadohealth.2009.09.011
- Treasure, J., Corfield, F., & Cardi, V. (2012). A three-phase model of the social emotional functioning in eating disorders. *European Eating Disorders Review, 20*(6), 431-438. doi:10.1002/erv.2181
- Trickett, P. K., & McBride-Chang, C. (1995). The developmental impact of different forms of child abuse and neglect. *Developmental Review, 15*(3), 311-337.
<https://doi.org/10.1006/drev.1995.1012>
- Trocmé, N., Fallon, B., MacLaurin, B., Sinha, V., Black, T., Fast, E., ... Holroyd, J. (2010). *Canadian incidence study of reported child abuse and neglect – 2008: Major findings*. Ottawa, ON: Public Health Agency of Canada.

- Trocme, N., Fallon, B., Sinha, V., Van Wert, M., Kozlowski, A., & MacLaurin, B. (2013). Differentiating between child protection and family support in the Canadian child welfare system's response to intimate partner violence, corporal punishment, and child neglect. *International Journal of Psychology, 48*(2), 128-140. <http://dx.doi.org/10.1080/00207594.2013.765571>
- Turner, H. A., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime victimization on the mental health of children and adolescents. *Social Science & Medicine, 62*(1), 13-27. doi:10.1016/j.socscimed.2005.05.030
- Turner, P. K., Runtz, M. G., & Galambos, N. L. (1999). Sexual abuse, pubertal timing, and subjective age in adolescent girls: A research note. *Journal of Reproductive and Infant Psychology, 17*(2), 111-118. <http://dx.doi.org/10.1080/02646839908409091>
- Tylka, T. L. (2004). The relation between body dissatisfaction and eating disorder symptomatology: An analysis of moderating variables. *Journal of Counseling Psychology, 51*(2), 178-191. doi:10.1037/0022-0167.51.2.178
- Ullman, S. E., & Filipas, H. H. (2005). Ethnicity and child sexual abuse experiences of female college students. *Journal of Child Sexual Abuse, 14*(3), 67-89. https://doi.org/10.1300/J070v14n03_04
- Ullman, S. E., Relyea, M., Peter-Hagene, L., & Vasquez, A. L. (2013). Trauma histories, substance use coping, PTSD, and problem substance use among sexual assault victims. *Addictive Behaviors, 38*(6), 2219-2223. doi:10.1016/j.addbeh.2013.01.027
- UNESCO Institute for Statistics. (2011). *Global education digest 2011: Comparing education statistics across the world*. Montreal, Quebec: UNESCO Institute for Statistics.
- Unger, J. A. M., & De Luca, R. V. (2014). The relationship between childhood physical abuse and adult attachment styles. *Journal of Family Violence, 29*(3), 223-234. doi:10.1007/s10896-014-9588-3

- VanBoven, A. M., & Espelage, D. L. (2006). Depressive symptoms, coping strategies, and disordered eating among college women. *Journal of Counseling and Development, 84*(3), 341-348.
<http://dx.doi.org/10.1002/j.1556-6678.2006.tb00413.x>
- Vaz-Leal, F. J., Ramos-Fuentes, M. I., Rodríguez-Santos, L., Flores-Mateos, I. S., Franco-Zambrano, A., Rojo-Moreno, L., & Beato-Fernández, L. (2015). Neurobiological and clinical variables associated with alcohol abuse in bulimia nervosa. *European Eating Disorders Review, 23*(3), 185-192. doi:10.1002/erv.2352
- Villa, V., Manzoni, G. M., Pagnini, F., Castelnovo, G., Cesa, G. L., & Molinari, E. (2009). Do coping strategies discriminate eating disordered individuals better than eating disorder features? An explorative study on female inpatients with anorexia and bulimia nervosa. *Journal of Clinical Psychology in Medical Settings, 16*(4), 297-303. doi:10.1007/s10880-009-9172-9
- Wagner, E. F., Myers, M. G., & McIninch, J. L. (1999). Stress-coping and temptation-coping as predictors of adolescent substance use. *Addictive Behaviors, 24*(6), 769-779.
[https://doi.org/10.1016/S0306-4603\(99\)00058-1](https://doi.org/10.1016/S0306-4603(99)00058-1)
- Waller, G., Cordery, H., Corstorphine, E., Hinrichsen, H., Lawson, R., Mountford, V., & Russell, K. (2007). *Cognitive behavioral therapy for eating disorders: A comprehensive treatment guide*. Cambridge: Cambridge University Press.
- Weissman, D. G., Bitran, D., Miller, A. B., Schaefer, J. D., Sheridan, M. A., & McLaughlin, K. A. (2019). Difficulties with emotion regulation as a transdiagnostic mechanism linking child maltreatment with the emergence of psychopathology. *Development and Psychopathology, 1*-17. doi:10.1017/S0954579419000348
- Wekerle, C., & Wall, A.-M. (2002). Introduction: The overlap between relationship violence and substance abuse. In C. Wekerle & A.-M. Wall (Eds.), *The violence and addiction equation:*

Theoretical and clinical issues in substance abuse and relationship violence (pp. 1–21). New York, NY: Brunner- Routledge.

- Whiffen, V. E., & Macintosh, H. B. (2005). Mediators of the link between childhood sexual abuse and emotional distress: A critical review. *Trauma, Violence and Abuse, 6*(1), 24-39.
doi:10.1177/1524838004272543
- White, H. R., & Widom, C. S. (2008). Three potential mediators of the effects of child abuse and neglect on adulthood substance use among women. *Journal of Studies on Alcohol and Drugs, 69*(3), 337-347. <http://dx.doi.org/10.15288/jsad.2008.69.337>
- Wollenberg, G., Shriver, L. H., & Gates, G. E. (2015). Comparison of disordered eating symptoms and emotion regulation difficulties between female college athletes and non-athletes. *Eating Behaviors, 18*, 1-6. <http://dx.doi.org/10.1016/j.eatbeh.2015.03.008>
- Woodin, E. M. (2008). *Drug use frequency survey*. Unpublished questionnaire. University of Victoria.
- Woodside, D. B., & Kennedy, S. H. (1995). Gender differences in eating disorders. In M. V. Seeman (Ed.), *Gender and psychopathology* (pp. 253-268). Washington, DC: American Psychiatric Press, Inc.
- World Health Organization. (1999). *Report of the consultation on child abuse prevention*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2000). *International guide for monitoring alcohol consumption and related harm*. Geneva, Switzerland: World Health Organization.
- Wright, M. O., Crawford, E., & Sebastian, K. (2007). Positive resolution of childhood sexual abuse experiences: The role of coping, benefit-finding and meaning-making. *Journal of Family Violence, 22*, 597–608. doi:10.1007/s10896-007-9111-1
- Wurtele, S. K., Simons, D. A., & Moreno, T. (2014). Sexual interest in children among an online sample of men and women: Prevalence and correlates. *Sexual Abuse, 26*(6), 546-568.
doi:10.1177/1079063213503688

- Yamamiya, Y., Cash, T. F., Melnyk, S. E., Posavac, H. D., & Posavac, S. S. (2005). Women's exposure to thin-and-beautiful media images: Body image effects of media-ideal internalization and impact-reduction interventions. *Body Image, 2*(1), 74-80. 10.1016/j.bodyim.2004.11.001
- Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment, 32*, 189–198. doi:10.1016/j.jsat.2006.08 .002
- Zeanah, C. H., & Humphreys, K. L. (2018). Child abuse and neglect. *Journal of the American Academy of Child & Adolescent Psychiatry, 57*(9), 637-644. doi:10.1016/j.jaac.2018.06.007

Appendix A: Letter of Information for Implied Consent for participants accessing the survey via the Social Psychology Network, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research websites

Introduction: You are invited to participate in a study assessing childhood experiences (including adverse childhood experiences such as child maltreatment), substance use, and eating behaviours in adulthood, which is being conducted by Carolyn Mirotchnick (Ph.D. student in Psychology) and Dr. Marsha Runtz (Associate Professor in the Department of Psychology) at the University of Victoria, in Victoria, British Columbia, Canada. You may contact **Ms. Mirotchnick**, the principal investigator, at (email) if you have any questions about this research. You may also contact **Dr. Marsha Runtz** at (phone number) or (email).

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 adverse childhood experiences, and adulthood behaviors and experiences such as well-being, substance use and eating behaviours. 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 mental health. Understanding how childhood experiences might affect one's long-term adjustment 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. 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 on-line 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 or submit your name or any identifying information** 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 resources listed 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). Computerized anonymous data files 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 substance use, eating behaviours, adverse childhood experiences (including child maltreatment), and psychological well-being.

Eligibility: You are eligible to participate in this study if you identify as a woman (including a trans or non-binary woman) who is 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 30 minutes). 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 substance use, eating behaviours, adverse childhood experiences, including child maltreatment, and psychological well-being). 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 principal investigator (Ms. Mirotnick) or her supervisor (Dr. Runtz) about any concerns that might have arisen as a result of participating in this research. In addition, phone numbers for support resources will be provided at the end of this letter, should these services be of need to you.

Benefits: In addition to having the chance to be entered in a draw for 4 chances to win a \$25 gift certificate, the potential benefit of your participation includes contributing to research that will help us, the researchers, to understand how childhood experiences might affect people's adjustment as adults.

Compensation: You will have the opportunity to win a prize regardless of whether you complete the entire survey (simply click submit when you are done). You have the option of being entered into a draw with 4 chances to win a \$25 gift certificate (CAD \$ or equivalent amount) for the Amazon website of your country. 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. If you want to be entered in the draw, you will be asked to provide your email address: your email address will be transferred to a separate data bank so it can not be linked to your answers and any identifying information provided for the purpose of the draw will be destroyed following the draw and the successful delivery of the prizes to the winners.

Results from the Study: After you have completed 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 Ms. Mirotnick directly or check Dr. Runtz's 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 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 Human Research Ethics Office 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:

- Betterhelp (online private counseling): <https://www.betterhelp.com/>
- Psychology Today (find a therapist): <https://therapists.psychologytoday.com/rms>
- To find a therapist internationally, go to GoodTherapy.org: <http://www.goodtherapy.org/>
- To find a Psychologist in Canada: http://www.findapsychologist.ca/wp-content/themes/crhspp/index_search.php To find a Psychologist in Canada or the US: <http://locator.apa.org>
- To find a a psychologist in your country or region, go to EuroPsy: <http://www.europsy-efpa.eu/find-a-psychologist>
- Canadian Suicide & Crisis Hotlines: <http://www.suicideprevention.ca/in-crisis-now/find-a-crisis-centre-now/>
- National Suicide Prevention Hotline (US): 1-800-273-TALK (8255); <https://suicidepreventionlifeline.org/>
- For a list of international suicide hotlines: <http://www.suicide.org/international-suicide-hotlines.html>
- For help with eating disorders, there is The National Eating Disorder Information Centre (NEDIC) in Canada: <http://nedic.ca> or the National Eating Disorders Association in the US: <https://www.nationaleatingdisorders.org>
- For international eating disorders resources, see Eating Disorder Hope: <https://www.eatingdisorderhope.com/treatment-for-eating-disorders/international>
- For help with problematic substance use please see the Canadian Centre on Substance Abuse website with provincial resources <http://www.ccsa.ca/Eng/Pages/Addictions-Treatment-Helplines-Canada.aspx> and The Substance Abuse and Mental Health Services Administration (SAMHSA) website with services for the US: <https://www.samhsa.gov/find-help/national-helpline>
- For international problematic substance use treatment locators, see The Addiction Recovery Guide: http://www.addictionrecoveryguide.org/treatment/international_treatment_locators
- If you have any concerns about a child at risk, please contact your local Child Protective Services or police in your area.

Appendix B: Letter of Information for Implied Consent for participants accessing the survey via CrowdFlower

Introduction: You are invited to participate in a study assessing childhood experiences (including adverse childhood experiences such as child maltreatment), substance use, and eating behaviours in adulthood, which is being conducted by Carolyn Mirotchnick (Ph.D. student in Psychology) and Dr. Marsha Runtz (Associate Professor in the Department of Psychology). You may contact **Ms.**

Mirotchnick, the principal investigator, at (email) if you have any questions about this research. You may also contact **Dr. Marsha Runtz** at (phone number) or (email).

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 adverse childhood experiences, and adulthood behaviors and experiences such as well-being, substance use and eating behaviours. 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 mental health. Understanding how childhood experiences might affect one's long-term adjustment 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. 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 on-line 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 or submit your name or any identifying information** 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 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 resources listed 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). Computerized anonymous data files 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 substance use, eating behaviours, adverse childhood experiences (including child maltreatment), and psychological well-being.

Eligibility: You are eligible to participate in this study if you identify as a woman (including a trans or non-binary woman) who is 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 30 minutes). 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 substance use, eating behaviours, adverse childhood experiences, including child maltreatment, and psychological well-being). 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 principal investigator (Ms. Mirotchnick) or her supervisor (Dr. Runtz) about any concerns that might have arisen as a result of participating in this research. In addition, phone numbers for support resources will be provided at the end of this letter, should these services be of need to you.

Benefits: In addition to receiving a payment of \$1.00 for completing this questionnaire, the potential benefit of your participation includes helping us, the researchers, to understand how childhood experiences might affect people's adjustment as adults.

Compensation: Compensation will be offered regardless of whether you fully complete this survey. To compensate you for your participation, you will be paid \$1.00. 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.

Results from the Study: After you have completed 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 Ms. Mirotchnick directly or check Dr. Runtz's 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 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 Human Research Ethics Office 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:

- Betterhelp (online private counseling): <https://www.betterhelp.com/>
- Psychology Today (find a therapist): <https://therapists.psychologytoday.com/rms>
- GoodTherapy.org: <http://www.goodtherapy.org/>

- To find a Psychologist in Canada: http://www.findapsychologist.ca/wp-content/themes/crhspp/index_search.php To find a Psychologist in Canada or the US: <http://locator.apa.org>
- Canadian Suicide & Crisis Hotlines: <http://www.suicideprevention.ca/in-crisis-now/find-a-crisis-centre-now/>
- National Suicide Prevention Hotline (US): 1-800-273-TALK (8255); <https://suicidepreventionlifeline.org/>
- For help with eating disorders, there is The National Eating Disorder Information Centre (NEDIC) in Canada: <http://nedic.ca> or the National Eating Disorders Association in the US: <https://www.nationaleatingdisorders.org>
- For help with problematic substance use please see the Canadian Centre on Substance Abuse website with provincial resources <http://www.ccsa.ca/Eng/Pages/Addictions-Treatment-Helplines-Canada.aspx> and The Substance Abuse and Mental Health Services Administration (SAMHSA) website with services for the US: <https://www.samhsa.gov/find-help/national-helpline>
- If you have any concerns about a child at risk, please contact your local Child Protective Services or police in your area.

Appendix C: Online Debriefing Form for participants accessing the survey via the Social Psychology Network website, Psychological Research on the Net, The Inquisitive Mind, or Online Psychology Research websites

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 consequences of adverse childhood experiences (including child maltreatment). In particular, we are interested in how individuals develop and adjust following adverse childhood experiences and what effects their coping patterns might have on their use of substances and eating behaviours. There is some evidence to suggest that individuals who have difficult early life experiences (such as physical or sexual maltreatment) may cope with these experiences, in part, by engaging in behaviours that could negatively impact their well-being. Results from studies such as this one will be of benefit to psychologists and others in health care professions to develop prevention programs and to 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. Carolyn Mirotchnick at (email) if you have any questions about this research. You may also contact Dr. Marsha Runtz at (phone number) or (email). We will be happy to respond to any questions that you may have about this research. You may also contact the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca) if you have any questions or concerns about 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:

- Betterhelp (online private counseling): <https://www.betterhelp.com/>
- Psychology Today (find a therapist): <https://therapists.psychologytoday.com/rms>
- To find a therapist internationally, go to GoodTherapy.org: <http://www.goodtherapy.org/>
- To find a Psychologist in Canada: http://www.findapsychologist.ca/wp-content/themes/crhspp/index_search.php To find a Psychologist in Canada or the US: <http://locator.apa.org>
- To find a a psychologist in your country or region, go to EuroPsy: <http://www.europsy-efpa.eu/find-a-psychologist>
- Canadian Suicide & Crisis Hotlines: <http://www.suicideprevention.ca/in-crisis-now/find-a-crisis-centre-now/>
- National Suicide Prevention Hotline (US): 1-800-273-TALK (8255); <https://suicidepreventionlifeline.org/>
- For a list of international suicide hotlines: <http://www.suicide.org/international-suicide-hotlines.html>

- For help with eating disorders, there is The National Eating Disorder Information Centre (NEDIC) in Canada: <http://nedic.ca> or the National Eating Disorders Association in the US: <https://www.nationaleatingdisorders.org>
- For international eating disorders resources, see Eating Disorder Hope: <https://www.eatingdisorderhope.com/treatment-for-eating-disorders/international>
- For help with problematic substance use please see the Canadian Centre on Substance Abuse website with provincial resources: <http://www.ccsa.ca/Eng/Pages/Addictions-Treatment-Helplines-Canada.aspx> and The Substance Abuse and Mental Health Services Administration (SAMHSA) website with services for the US: <https://www.samhsa.gov/find-help/national-helpline>
- For international problematic substance use treatment locators, see The Addiction Recovery Guide: http://www.addictionrecoveryguide.org/treatment/international_treatment_locators
- If you have any concerns about a child at risk, please contact your local Child Protective Services or police in your area.

THANK YOU!

IF YOU WOULD LIKE TO BE ENTERED INTO THE DRAW with 4 chances to win a \$25 gift certificate (CAD \$ or equivalent amount) for the Amazon website of your country, please send an email with your name, email, and phone number to (email).

Appendix D: Online Debriefing Form for participants accessing the survey via CrowdFlower

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 consequences of adverse childhood experiences (including child maltreatment). In particular, we are interested in how individuals develop and adjust following adverse childhood experiences and what effects their coping patterns might have on their use of substances and eating behaviours. There is some evidence to suggest that individuals who have difficult early life experiences (such as physical or sexual maltreatment) may cope with these experiences, in part, by engaging in behaviours that could negatively impact their well-being. Results from studies such as this one will be of benefit to psychologists and others in health care professions to develop prevention programs and to 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. Carolyn Mirotchnick at (email) if you have any questions about this research. You may also contact Dr. Marsha Runtz at (phone number) or ([email](#)). We will be happy to respond to any questions that you may have about this research. You may also contact the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca) if you have any questions or concerns about 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:

- Betterhelp (online private counseling): <https://www.betterhelp.com/>
- Psychology Today (find a therapist): <https://therapists.psychologytoday.com/rms>
- GoodTherapy.org: <http://www.goodtherapy.org/>
- To find a Psychologist in Canada: http://www.findapsychologist.ca/wp-content/themes/crhspp/index_search.php To find a Psychologist in Canada or the US: <http://locator.apa.org>
- Canadian Suicide & Crisis Hotlines: <http://www.suicideprevention.ca/in-crisis-now/find-a-crisis-centre-now/>
- National Suicide Prevention Hotline (US): 1-800-273-TALK (8255); <https://suicidepreventionlifeline.org/>
- For help with eating disorders, there is The National Eating Disorder Information Centre (NEDIC) in Canada: <http://nedic.ca> or the National Eating Disorders Association in the US: <https://www.nationaleatingdisorders.org>
- For help with problematic substance use please see the Canadian Centre on Substance Abuse website with provincial resources <http://www.ccsa.ca/Eng/Pages/Addictions-Treatment-Helplines->

[Canada.aspx](#) and The Substance Abuse and Mental Health Services Administration (SAMHSA) website with services for the US: <https://www.samhsa.gov/find-help/national-helpline>

- If you have any concerns about a child at risk, please contact your local Child Protective Services or police in your area.

THANK YOU!

Appendix E: Demographic Information

1. Where did you see the announcement for this study?

- On the Social Psychology Network website
- On the Psychological Research on the Net website
- On The Inquisitive Mind website
- On the Online Psychology Research website
- On CrowdFlower
- Other (specify):

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

3. 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/Indigenous/Native Canadian/Native American
- Hispanic/Latino(a)
- Mixed (Specify):
- Other (Specify):

4. What is your country of origin? _____

5. 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 (specify):

6. What is the highest level of education you have completed?

1. Some primary school (kindergarten to grade 7, but no secondary school)
2. Some secondary school (high school, grades 8 to 12)
3. Completed secondary school (or high school equivalent)
4. Technical school or trade diploma
5. College/university: some undergraduate courses completed
6. College/university: completed undergraduate degree (e.g., B.A.)
7. College/university: completed a master degree (M.A., M.Sc.)
8. College/university: completed a doctoral degree (Ph.D.)
9. College/university: other professional degree (e.g., M.D., LLB)

7. 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)

8a. What is your personal income before you pay taxes?

1. Less than \$10,000

2. \$10 000-\$19 999

3. \$20 000-\$29 999

4. \$30 000-\$39 999

5. \$40 000-\$49 999

6. \$50 000-\$59 999

7. \$60 000-\$69 999

8. \$70 000-\$79 999

9. \$80 000-\$89 999

10. \$90 000-\$99 999

11. \$100 000 or more

8b. Do other people rely on your income (e.g., your partner or children)?

Yes _____ No _____

8c. Please indicate who relies on your income.

Partner

Child(ren)

Parent(s)

Other:

8d. What is your combined income, including from your partner and any others 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

9. If you were living with your family when you were 18, 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

10. Are you currently in a committed romantic relationship?

Yes ____ No ____

11. What is your current relationship status?

Single, never married, not dating

Single, never married, dating casually

Single, never married, in a committed relationship

Living with romantic partner (i.e., living as married)

Married and living with spouse (all or most of the time)

Separated or divorced

Widowed

Other (specify) _____

12a. What is your current country of residence?

Canada

United States of America

Other (specify) _____

12b. If in Canada or the US, in what Province or State are you currently living? _____

13a. Are you currently a college or university student?

Yes ____ No ____

13b. If you are currently a student, 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

13c. If you are currently a student, what is your academic major?

Psychology

Undeclared

Not applicable

Other _____

Appendix F: Adverse Childhood Experience (ACE) Questionnaire

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often or very often...

Swear at you, insult you, put you down, or humiliate you?

or

Act in a way that made you afraid that you might be physically hurt?

Yes No

If yes enter 1 _____

2. Did a parent or other adult in the household often or very often...

Push, grab, slap, or throw something at you?

or

Ever hit you so hard that you had marks or were injured?

Yes No

If yes enter 1 _____

3. Did an adult person at least 5 years older than you ever...

Touch or fondle you or have you touch their body in a sexual way?

or

Attempt or actually have oral, anal, or vaginal intercourse with you?

Yes No

If yes enter 1 _____

4. Did you often or very often feel that ...

No one in your family loved you or thought you were important or special?

or

Your family didn't look out for each other, feel close to each other, or support each other?

Yes No

If yes enter 1 _____

5. Did you often or very often feel that ...

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

or

Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Yes No

If yes enter 1 _____

6. Were your parents ever separated or divorced?

Yes No

If yes enter 1 _____

7. Was your mother or stepmother:

Often or very often pushed, grabbed, slapped, or had something thrown at her?

or

Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?

or

Ever repeatedly hit at least a few minutes or threatened with a gun or knife?

Yes No

If yes enter 1 _____

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Yes No

If yes enter 1 _____

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?

Yes No

If yes enter 1 _____

10. Did a household member go to prison?

Yes No

If yes enter 1 _____

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245–258. doi: 10.1016/S0749-3797(98)00017-8

From: <https://acestoohigh.com/got-your-ace-score/>

<https://www.cdc.gov>

Appendix G: The Eating Attitudes Test–26 (EAT-26)

Note: The Eating Attitudes Test–26 (EAT-26) is a copyrighted measure. Accordingly, only the instructions and two example items are presented here.

Instructions:

Please fill out the form below as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.

Part B: Check a response for each of the following statements:

	Always	Usually	Often	Some- times	Rarely	Never
1. I am terrified about being overweight.						
2. I avoid eating when I am hungry.						

© Copyright: EAT-26: Garner et al. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871-878.

Garner, D. M., Olmsted, M. P., Bohr, Y. & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871–878.
<http://dx.doi.org/10.1017/S0033291700049163>

From: <https://www.eat-26.com>

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

Note: The Drug Abuse Screening Test–10 (DAST-10) is a copyrighted measure. Accordingly, only the instructions and two example items are presented here.

Part 1:

The following questions concern information about your possible involvement with drugs not including alcoholic beverages during the past 12 months and ever in your life (i.e., any time before the past year). Carefully read each statement and decide if your answer is "Yes" or "No". Then, circle the appropriate response beside the question.

In the statements "drug abuse" refers to (1) the use of prescribed or over the counter drugs in excess of the directions and (2) any non-medical use of drugs. The various classes of drugs may include: cannabis (e.g. marijuana, hash), solvents, tranquilizers (e.g. Valium), barbiturates, cocaine, stimulants (e.g. speed), hallucinogens (e.g. LSD) or narcotics (e.g. heroin). Remember that the questions do not include alcoholic beverages.

Please answer the following questions. If you have difficulty with a statement, then choose the response that is mostly right.

Please answer the following questions separately for the past year and ever in your life (i.e., any time before the past year)

	In the past year (yes-no)	Before the past year (yes-no)
1. Have you used drugs other than those required for medical reasons?		
2. Do you abuse more than one drug at a time?		

© Copyright 1982 by Harvey A. Skinner, Ph.D. and the Centre for Addiction and Mental Health, Toronto, Canada

For information on the DAST, contact Dr. Harvey Skinner at the Addiction Research Foundation, 33 Russell St., Toronto, Canada, M5S 2S1.

Skinner, H. A. (1982). The Drug Abuse Screening Test. *Addictive Behaviors*, 7, 363-371.
doi:10.1016/0306-4603(82)90005-3

From: <https://cde.drugabuse.gov/instrument/e9053390-ee9c-9140-e040-bb89ad433d69>

Part 2:

Indicate how many times you have used the following types of drugs separately for the past year and ever in your life (i.e., any time before the past year).

In the past year:

0 = Never

1 = 1-2 times

2 = 3-5 times

- 3 = 6-9 times
- 4 = 10-19 times
- 5 = 20-39 times
- 6 = 40 or more times

Ever (i.e., any time before the past year):

- 0 = Never
- 1 = 1-2 times
- 2 = 3-5 times
- 3 = 6-9 times
- 4 = 10-19 times
- 5 = 20-39 times
- 6 = 40 or more times

1. Marijuana
2. LSD
3. Ecstasy/MDMA
4. Other hallucinogens (e.g., mushrooms)
5. Cocaine
6. Heroin
7. Crystal methamphetamine (“crystal meth”)
8. Inhalants (e.g., paint thinner)
9. Nonmedical use of prescription medications (e.g., pain medications, sleeping medications, anxiety/sedative medications, or stimulant medications)

Woodin, E. M. (2008). *Drug use frequency survey*. Unpublished questionnaire. University of Victoria.

Appendix I: Alcohol Use Disorders Identification Test (AUDIT)

Part 1:

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 of your drinking?

Never	Less than Monthly	Monthly	Weekly	Daily or almost daily
-------	----------------------	---------	--------	--------------------------

interview: Reliability and validity according to the CIDI. *European Psychiatry*, 12(5), 224-231.
doi:10.1016/S0924-9338(97)83296-8

World Health Organization. (2000). *International guide for monitoring alcohol consumption and related harm*. Geneva, Switzerland: World Health Organization.

Appendix J: The Coping Strategy Indicator (CSI)

Dr. James H. Amrikhan
Department of Psychology
California State University, Long Beach

Note: The Coping Strategy Indicator (CSI) is a copyrighted measure. Accordingly, only the instructions and two example items are presented here.

We are interested in how people cope with the problems and troubles in their lives. Listed below are several possible ways of coping. We would like you to indicate to what extent you, yourself, used each of these coping methods. All of your responses will remain anonymous.

Try to think of one problem you have encountered in the last six months or so. This should be a problem that was important to you, and that caused you to worry (anything from the loss of a loved one to a traffic citation, but one that was important to you).

Please describe this problem in a few words (remember, your answers to all questions in this survey will be kept anonymous):

With this problem in mind, indicate how you coped by checking the appropriate box for each coping behaviour listed on the following pages. Please answer the following questions.

Did you remember to write down your problem? If not, please do so before going on.

Keeping that stressful event in mind, indicate to what extent you

	A lot	A little	Not at all
1. Let your feelings out to a friend?			
2. Rearranged things around you so that your problem had the best chance of being resolved?			

Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59(5), 1066-1074.
<http://dx.doi.org/10.1037/0022-3514.59.5.1066>

From: <https://stresslabcsulb.weebly.com/csi.html>

Appendix K: Emotion Regulation Questionnaire (ERQ)

Note: The Emotion Regulation Questionnaire (ERQ) is a copyrighted measure. Accordingly, only the instructions and two example items are presented here.

The Emotion Regulation Questionnaire is designed to assess individual differences in the habitual use of two emotion regulation strategies: cognitive reappraisal and expressive suppression.

Instructions and Items

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1	2	3	4	5	6	7
Strongly disagree			Neutral			Strongly agree

1. When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.
2. I keep my emotions to myself.

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348-362.

From <http://www.midss.org/sites/default/files/erq.pdf>

Appendix L: Glossary of Terms

Anorexia nervosa: Mental illness characterized by restricted energy intake that results in emaciation, a pronounced fear of gaining weight or getting fat, behaviours that aim to prevent weight gain, and a distorted body image (American Psychiatric Association, 2013).

Binge eating: Eating an excessively large amount of food in a discrete amount of time during which individuals feel as though they cannot control their eating (American Psychiatric Association, 2013).

Binge eating disorder: Mental illness characterized by regular periods of binge eating associated with severe distress and that are not followed by any compensatory strategies (American Psychiatric Association, 2013).

Bulimia nervosa: Mental illness characterized by regular periods of binge eating followed by compensatory strategies in an effort to interfere with weight gain, and over-evaluation of body shape and weight (American Psychiatric Association, 2013).

Child emotional abuse: When a child's sense of self is damaged through actions or omissions that lead to (or have the potential to lead to) significant struggles with mental health, cognition, behaviour, or emotions (Department of Justice Canada, 2011). This can include verbally threatening, socially isolating, or intimidating a child, as well as terrorization, exploitation, exposure to family violence, or consistently demanding too much of a child.

Child maltreatment: Any time a parent or someone in a position of responsibility, power, or trust subjects a child to any type of harm, or risk of harm by acts of commission (i.e., acting directly) or omission (i.e., failing to provide a necessary component of care; Public Health Agency of Canada, 2012). It can encompass physical, psychological, social, emotional or sexual abuse of a child and it can endanger the safety, survival, self-confidence, and development of a child.

Child neglect: Chronic, repeated incidents in which a caregiver fails to meet the physical, psychological, or emotional needs of a child (Department of Justice Canada, 2011). This may entail failure to provide a child with food, clothes, shelter, cleanliness, medical care, protection from danger, love, safety, or a sense of self-worth.

Child physical abuse: Deliberately using force against a child that leads to injury or has the potential to lead to injury (Department of Justice Canada, 2011). It can consist of hitting, beating, shaking, pushing, choking, biting, burning, kicking, assaulting with a weapon, female genital mutilation, holding a child under water, or any other type of dangerous use of force.

Child sexual abuse: When an individual exploits a child in a sexual manner and encompasses any sexual act between a child under 16 years old and an adult, between an adult and a child of 16 to 18 years old who does not provide consent, and any sexual exploitation (e.g., prostitution, pornography) of a child younger than 18 years old (Department of Justice Canada, 2011). The age of consent for sexual interactions is 16 years of age in Canada, however there are exceptions if the other individual is close to the same age. Sexual activities comprise all situations in which sexual contact occurs between a child and (a) someone who has power or authority over the child, (b) someone on whom the child depends, or (c) someone who the child trusts.

Compensatory strategies: Strategies used to prevent weight gain (American Psychiatric Association, 2013). They may include vomiting, inappropriate use of laxatives, misuse of diuretics, excessive exercise and fasting.

Coping: Cognitive and behavioural strategies used to manage stressful life events that may exceed individuals' personal resources (Lazarus & Folkman, 1984).

Eating disorders: Disturbances in eating or behaviour associated with eating that lead to changes in food intake or absorption and that result in harm to physical health, psychological wellbeing, and/or social functioning (American Psychiatric Association, 2013).

Emotion regulation: The ways in which individuals try to influence which emotions they experience, when they experience them, and how they are experienced or expressed (Gross 1998, 2015).