Childhood Psychological Maltreatment and Neglect, Intimate Relationships, Adult Attachment, and their Relation to Depressive Symptoms in Young Adults

by

Keara Rodd
B.A., Queen's University, 2015

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

MASTER OF SCIENCE

in the Department of Psychology

Supervisory Committee

Childhood Psychological Maltreatment and Neglect, Intimate Relationships, Adult Attachment, and their Relation to Depressive Symptoms in Young Adults

by

Keara Rodd
B.A., Queen's University, 2015

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

MASTER OF SCIENCE

in the Department of Psychology

Dr. Marsha G. Runtz (Department of Psychology)
Supervisor

Dr. Erica M. Woodin (Department of Psychology)
Departmental Member

Abstract

Dr. Marsha G. Runtz (Department of Psychology)
Supervisor

Dr. Erica M. Woodin (Department of Psychology)
Departmental Member

Early life experiences such as childhood maltreatment are important contributors to depression, one of the most significant mental health problems in Canada; approximately 11.2% of Canadian adults will experience major depression at some point in their life (Knoll & MacLennan, 2017). Although psychological maltreatment and neglect are the most common forms of child maltreatment, and it has been suggested that they are linked to later depression, the underlying mechanisms explaining this relation have yet to be determined. The current investigation examined the role of adult attachment and relationship satisfaction in the prediction of depressive symptomology in 676 university students (74% female). Both anxious and avoidant attachment were mediators of the relationship between childhood psychological maltreatment (CPM) and adult depressive symptoms. Only avoidant attachment was a mediator of the relationship between childhood psychological neglect (CPN) and depressive symptoms. Relationship status did not moderate the relationship between maltreatment and attachment. However, for those currently in romantic relationships, the effect of CPM on avoidant attachment was moderated by relationship satisfaction. Specifically, those with a history of CPM who were currently in a satisfying relationship experienced heightened attachment avoidance along with subsequent depressive symptoms. Implications and strategies for clinical intervention are discussed.

Table of Contents

List of Figures

List of Tables

Acknowledgements

There are many people who deserve my thanks for their contributions to this thesis. I would like to thank my supervisor, Dr. Marsha Runtz, for her endless feedback, guidance, and support. Without her time and energy, this project would not have been possible. I would also like to thank Dr. Erica Woodin for her insight and contributions which greatly added to this research. Lastly, I am grateful to Dr. Tim Black, as external examiner, for such thoughtful questions and suggestions.

I am very grateful for the tremendous amount of work that happened before I even began this thesis. I would like to thank all of the members of my lab for their help with data collection and coding. I am also incredibly thankful to all of the individuals who participated in this study and selflessly and authentically shared their experiences.

Lastly, I would like to thank my family and friends who have continuously supported and encouraged me as I have embarked down this path. Thank you for inspiring me to to be an enthusiast in life and to tackle each challenge at full speed.

Introduction

Child psychological maltreatment (CPM) and child psychological neglect (CPN) have been linked to many long-term deleterious effects, including major depressive disorder, which is a common and significant health problem in Canada (Chapman et al., 2004; Infurna et al., 2016; Liu, Alloy, Abramson, Iacoviello, & Whitehouse, 2009). However, the mechanisms elucidating this relationship have yet to be fully established. CPM and CPN are associated with the development of insecure styles of attachment and disrupted intimate relationship functioning (Briere, Godbout, & Runtz, 2012; Godbout, Lussier, & Sabourin, 2006; Murphy et al., 2014; Riggs & Kaminksi, 2010). Additionally, insecure attachment and relationship functioning and satisfaction have been linked to depressive symptoms (Bifulco et al., 2006; Liu & Chen, 2006; Wright, Crawford & Del Castillo, 2009). The current study seeks to elucidate the relationship between childhood maltreatment and depressive symptoms by examining the role of adult attachment and relationship satisfaction in one coherent model.

Child Psychological Maltreatment and Neglect

Child psychological maltreatment and neglect are the two most common forms of reported child maltreatment in Canada (Fallon et al., 2010). Physical and sexual abuse are usually incident-specific, meaning they occur and are identified situationally, whereas psychological maltreatment often involves chronic situations that may be less easily identifiable (Hildyard & Wolfe, 2002). Additionally, unlike sexual and physical abuse, psychological maltreatment and neglect usually involve the child's primary caregiver and attachment figure. Subsequently, this type of abuse is often difficult to recognize and to intervene in effectively. Many frameworks and definitions for psychological maltreatment and neglect exist in the literature. Glaser (2002) suggested that psychological maltreatment and neglect should be

conceptualized as a harmful *relationship* between the caregiver and child, not necessarily as one event or a series of incidents. Glaser explained that the concerning interactions between child and caregiver are generally representative of their relationship as a whole. These interactions cause impairment to the psychological and emotional health or development of the child. They do not require physical contact or even the intention of harm. To differentiate, psychological maltreatment involves commission, words or overt actions that cause harm, potential harm, or the threat of harm (e.g., involving the child in parental criminal acts or verbally threatening to hurt the child), whereas neglect involves omission, the failure to meet needs or to protect the child from harm or potential harm (e.g., isolation) (Glaser, 2002). Thus, abusive behaviour extends far beyond the typical conception of negative behaviour and interaction; a lack of positive behaviour, affect and interaction constitute psychological neglect. Furthermore, regardless of the child's temperament, condition, or whether the child's needs exceed the parent's ability to cope or their resources for parenting, the responsibility falls on the parent to seek help in order to ensure a safe and healthy environment for the child.

In contrast, the American Professional Society on the Abuse of Children (Myers et al., 2002) conceptualizes psychological maltreatment as an overarching concept including both acts of omission *and* commission which characterize a chronic relationship in which the caregiver conveys to the child that they are "worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another's needs" (APSAC, 1995, p.2). This can include verbal rejection or degradation, threats of physical harm, a lack of emotional responsibility to the child (including little interaction with the child or a lack of positive affect towards the child), isolating behaviours, and/or ignoring or failing to provide care for the child's needs (APSAC, 1995). A meta-analysis that included 244 publications from across the globe found a prevalence rate of

363/1000 for child psychological maltreatment and 184/1000 for child psychological neglect (Stoltenborgh, Bakermans-Kranenburg, Alink, & IJzendoorn, 2015). The Canadian Incidence Study of Reported Child Maltreatment found that in 40% of reported cases, neglect was the main reason for an investigation by child welfare services, and in 19% of reported cases, psychological maltreatment was the main reason for investigation (Trocmé, Tourigny, MacLaurin, Fallon, 2003). The most common form of all types of neglect in North America involves a failure to properly supervise the child, resulting in physical harm (Hildyard & Wolfe, 2002). Physical neglect (a failure to adequately meet the physical needs of the child), educational neglect, the permission of criminal behaviour, and abandonment are also common forms of neglect in North America. Additionally, Hildyard and Wolfe suggested that psychological neglect, which involves a failure to meet the child's basic emotional needs, is on the rise in North America; however, this form of neglect can be very difficult to detect.

Effects of Child Psychological Maltreatment and Neglect

The effect of psychological maltreatment and neglect cannot be underestimated; both have repercussions for a child's cognitive and emotional development. The severity of these repercussions is not surprising considering psychological maltreatment and neglect often severely disrupt a child's typical development and learning during critical periods (Hildyard & Wolfe, 2002). Specifically, attention and nurturance from parents is a vital component of one's psychological needs, which must be met for healthy development and well-being. Children who experience psychological maltreatment and neglect often have problems with cognitive development, for example in the judgement of right and wrong or the development of healthy cognitive attributions (the ability to positively and realistically infer the causes of behaviour and events; Hildyard & Wolfe, 2002). Additionally, there are often problems with the development

of a secure attachment style (Briere, Godbout, & Runtz, 2012). Lastly, social and behavioural problems are quite common in these children. They are often socially withdrawn and isolated from their peers (Hildyard & Wolfe, 2002). Correspondingly, notable problems with coping and emotion regulation typically exist. For example, children who experience neglect have difficulty correctly identifying the emotional expressions of their peers (Pollak, Cicchetti, Hornung, & Reed, 2000). Specifically, children who are physically neglected tend to perceive less distinction between angry, sad, and fearful expressions compared to other children (Pollak, Cicchetti, Hornung, & Reed, 2000). This difficulty perceiving and understanding the emotions of others may provide one explanation as to why children who have experienced maltreatment tend to experience social and emotional problems later in life (Hildyard & Wolfe, 2002).

Psychological maltreatment and neglect have been associated with many negative long-term outcomes (Hildyard & Wolfe, 2002). For example, adults who experienced this form of maltreatment as children tend to be more socially withdrawn and experience more internalized problems than adults who experienced physical abuse as children (Hildyard & Wolfe, 2002). Additionally, childhood psychological maltreatment and neglect are associated with other risk factors that, regardless of the presence of maltreatment, independently increase one's vulnerability to psychological difficulties and negative outcomes in adulthood such as: chronic poverty, caregiving deficits, parental psychopathology, substance abuse, homelessness, and family breakup (Hildyard & Wolfe, 2002).

Childhood Maltreatment and Depressive Symptoms

Major Depressive Disorder (MDD) is common disorder afflicting many Canadian's mental health. MDD's consequences are far reaching; experiencing MDD can impact one's social world, employment opportunities and functioning, and physical health (Knoll &

MacLennan, 2017). Recent findings from the Canadian Community Health Survey report that 11.2% of Canadians will experience MDD in their lifetime (Knoll & MacLennan, 2017). Depressive symptoms and disorders are also commonly considered a costly consequence of childhood maltreatment (Chapman et al., 2004; Infurna et al., 2016; Knoll & MacLennan, 2017; Liu, Alloy, Abramson, Iacoviello, & Whitehouse, 2009; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003). Spertus and colleagues (2003) conducted a study to link childhood psychological maltreatment to later depressive symptoms. The study found that childhood psychological maltreatment and neglect were strongly associated with anxiety, somatic symptoms, depression, and lifetime trauma exposure in a non-clinical sample of highly educated and profitably employed women. This strong association remained even after partialling out the variance accounted for by childhood physical and sexual abuse, and lifetime trauma exposure. Thus, psychological maltreatment and neglect during childhood are predictive of adult emotional functioning regardless of other negative life events.

In a recent meta-analysis of 12 primary studies with over 4000 participants, Infurna and colleagues (2016) examined five types of maltreatment (antipathy, neglect, physical abuse, sexual abuse, and psychological abuse) and their association with major depression, as measured by a CECA interview and clinical assessment. Psychological maltreatment, followed by neglect, were the two strongest correlates of major depression. All of the studies had samples of differing ages and settings which revealed some important temporal differences. A stronger association between maltreatment and depression was found in adolescent samples compared to adult samples. Infurna et al. (2016) speculated that this may be the result of a sensitive time period; adolescents are at a point in their lives where the protective factors of adulthood, such as a

healthy and secure intimate relationship or distance and independence from caregivers, have not yet emerged.

Chapman and colleagues (2004) conducted a retrospective cohort study with 9,460 adults who completed questionnaires including assessments of lifetime and recent depressive disorders, childhood abuse, and household dysfunction. This study determined that regardless of the type of abuse, the cumulative impact of multiple types of abuse had a graded relationship with lifetime and recent depressive disorders. Thus, the more types of abuse the child experienced, the higher their probability of experiencing a depressive disorder.

Potential Mediators for Depression

Elucidating the relationship between early psychological maltreatment and neglect and later depressive symptoms may guide appropriate and effective intervention. Currently, there are many explanations and theories regarding how childhood maltreatment may lead to later depressive symptoms.

Low self-esteem and cognitive beliefs. Psychological maltreatment during childhood, while controlling for all other types of abuse, has been found to be associated with low self-esteem (Briere & Runtz, 1990; Spertus et al., 2003). A lack of self-worth is associated with a maladaptive set of cognitive beliefs (biased, inaccurate, and rigid beliefs) regarding one's self-efficacy (Adler, Strunk, & Fazio, 2015). Moreover, maladaptive cognitive beliefs are thought to play an essential role in mood disorders; an individual's core views and false negative expectations of their world often lead to and/or perpetuate their depressive symptoms (Boden et al., 2012; Gibb et al., 2001). This may explain the association between childhood maltreatment and later depressive symptoms (Spertus et al., 2003).

Emotional inhibition and avoidant coping strategies. Emotional inhibition due to chronic emotional invalidation may be one mechanism for the association between child maltreatment and subsequent depressive symptoms. Krause, Mendelson, and Lynch (2003) found that childhood emotional invalidation is indeed associated with chronic emotional inhibition after conducting a study with 127 men and women between the ages of 18 and 30 recruited through advertisements posted by Duke University. Emotional invalidation includes psychological abuse, parental punishment, minimization by caregivers and parental feelings of distress in response to children's negative emotions. Emotional invalidation leads to difficulty in regulating emotions and often an overuse of avoidant regulatory strategies, such as emotional inhibition. The silencing of emotional expressions, the chronic suppression of thoughts, feelings, and urges related to one's emotions, and suppressing responses to stressful life events characterize emotional inhibition (Krause et al., 2003). Emotional inhibition has been implicated as a causal and/or maintaining factor for many different psychopathologies. Specifically, it is significantly predictive of depressive symptoms. Although emotional inhibition may be an effective coping strategy during early stressful life events as it is associated with escaping negative emotional experiences and emotional numbing, it actually tends to heighten negative affect, negative thoughts, physiological arousal, and psychological distress. Thus, an effective childhood coping strategy and response to maltreatment becomes maladaptive later in life. Similarly, Amirkhan, and Marckwordt (2016) examined the effects of coping strategies on current stress. In a community sample in British Columbia, Canada, avoidance coping was a significant mediator of the relationship between childhood trauma and current stress. Thus, individuals may also experience greater stress later in life, which may elicit a depressive episode, due to a reliance on the maladaptive coping strategies they learned during childhood.

Stress sensitivity hypothesis. Shapero and colleagues (2014) propose an alternative explanation for the association between childhood psychological maltreatment and depression. They suggest the heightened stress response of adults who experienced childhood maltreatment may be responsible for this association. The stress sensitivity hypothesis suggests that the first depressive episode sensitizes an individual to later life events. Thus, subsequent events that are less stressful than the initial causal event may still elicit a depressive episode. This could explain why recurrent depressive episodes may occur frequently. Shapero and colleagues postulate that perhaps stressful early life events do the same thing as these initial depressive episodes; individuals who experience stressful life events as children become sensitized to later stressors. Thus, these stressful events may illicit depressive symptoms in an individual who would not have experienced a depressive episode had they not experienced childhood maltreatment. Essentially, if we use the diathesis stress model to conceptualize the etiology of depression, individuals who experience early life stressors have a lower threshold for stress later in life. Consequently, the point where the individual begins to experience depressive symptoms is lowered. This hypothesis was supported in Shapero and colleague's study of 281 men and women who experienced childhood psychological maltreatment as children, controlling for both physical and sexual abuse. The results indicate that participants who had higher scores on measures of childhood psychological maltreatment experienced greater increases in depressive symptoms when confronted with stressful life events.

The mechanism for the effect in Shapero and colleague's study may involve the direct influence of early life stress on an individual's neurobiological development. Specifically, early life stress may directly alter the hypothalamic-pituitary-adrenal (HPA) axis, which is the neuroendocrine stress response system. Heim and colleagues (2000) confirmed this in a study

with 49 healthy women with no history of mania or psychosis, any active substance abuse or eating disorder, who were free of hormonal or psychotropic medications and who were divided into four groups based on their history of childhood maltreatment and a current depression diagnostic status. Adrenocorticotropic hormone, cortisol levels, and heart rate responses to a laboratory stressor were compared among these four groups. The study found robust abnormalities in the HPA axis, such that women with a history of childhood maltreatment had significantly increased pituitary-adrenal and autonomic responses to stress compared to controls. Furthermore, this effect was particularly strong in women who had current depressive symptoms. Thus, early life stress may alter an individual's stress response system making them more at risk for developing depression due to stressors later in life. However, it is important to note that this study did not control for other factors which may affect an individual's reaction to later stress, such as their cognitions or social connectedness. Thus, the stress response system may act with or augment other factors altered by early life stress.

Cognitive beliefs and processing. A well-established theory in the literature regarding the association between childhood maltreatment and later depressive symptoms involves changes to an individual's cognitive beliefs about their own efficacy and about the world (Gibb et al., 2001; Wells, Vanderlind, Selby, & Beevers, 2014). Gibb and colleagues (2001) conducted a study with 5,378 university freshman who were selected from the Temple-Wisconsin Cognitive Vulnerability to Depression Project. Individuals were initially screened with the Cognitive Style Questionnaire and the Dysfunctional Attitude Scale to determine their cognitive susceptibility to depression. Those who scored in the highest quartile were recruited and put in the 'high cognitive risk' group, and individuals who scored in the lowest quartile were recruited and put in the 'low cognitive risk' group. The study found that participants who reported childhood

psychological maltreatment had higher levels of hopelessness. Additionally, a history of childhood psychological maltreatment, but not physical or sexual maltreatment, was related to episodes of non-endogenous major depression and what the researchers called hopelessness depression during a two-and-a-half-year follow-up period. Furthermore, cognitive risk was a complete mediator for the relationship between childhood psychological maltreatment and both types of major depression (non-endogenous and hopelessness).

Wells and colleagues (2014) suggested that childhood abuse creates 'cognitive scars' which lead to depression in adulthood. Specifically, they measured maladaptive cognitive styles in university students. Wells and colleagues suggested a dual process model of cognitive vulnerability to depression, such that cognitive functioning involves two distinct, yet related, processes: the "Associative/Automatic" process and the "Reflective/Effortful process" (p. 822). Furthermore, individuals who are vulnerable to depression display "negative associative processing," for example, the tendency to interpret a neutral or vague stimuli as negative. However, individuals may be able to correct negative and automatic associations through "reflective processing," which involves critical thinking and may be arduous (Wells et al., 2014, p. 822). If the individual is exposed to a stressor, his or her ability to engage in reflective processing is inhibited, which may subsequently cause negative cognitions to prevail in the individual's thinking. This was demonstrated in Wells and colleagues (2014) study when a history of childhood maltreatment was only associated with a negative interpretation bias when the task was administered with a cognitive load. Thus, it is possible that individuals with a history of child maltreatment may only experience a negative interpretation bias when faced with stressors that inhibit their reflective processing later in life. The study also found that individuals who experienced childhood emotional maltreatment, without controlling for other types of

maltreatment, had higher scores on the measure for dysfunctional attitudes, a hallmark of depression. The intensity of emotional childhood maltreatment was also associated with an increased cognitive vulnerability to depression and to depressive symptoms. Dysfunctional attitudes and negative attributions were significantly associated with depressive symptoms in individuals who experienced childhood emotional maltreatment. Furthermore, dysfunctional attitudes mediated the relationship between childhood emotional abuse and later depressive symptoms. Thus, cognition, dysfunctional beliefs, and negative attributions, are key pieces in elucidating the link between childhood psychological maltreatment and later depressive symptoms.

Conceptualizing Depression Contextually

A significant amount of research exists regarding the reasons childhood psychological maltreatment and neglect may lead to later depressive symptoms (Shapero et al., 2014; Wells, Vanderlind, Selby, & Beevers, 2014). Yet, most of these theories conceptualize depression as an internal disorder that is located primarily within the individual. However, there is mounting evidence to suggest that, in some circumstances, it would be appropriate for clinical psychologists to begin to conceptualize depression as a relational disorder, examining the scope and symptoms of depression within one's social context (Hames, Hagan, & Joiner, 2013; Mackinnon et al., 2012). People have an innate need for social connection that is essential to well-being (Hames et al., 2013). Given this core and ubiquitous need to form and maintain interpersonal relationships, it is vital to understand how depression may interact with and be dependent on one's interpersonal context and social environment (Hames et al., 2013).

Symptoms of MDD impact one's behaviours, emotions, and cognitions. Subsequently, this affects how an individual with depression interacts with their environment. Common

depressive symptoms include sadness, anhedonia, feelings of worthlessness, and a loss of pleasure in previously enjoyed activities or social interactions (Hames et al., 2013). It is also common for those experiencing depressive symptoms to talk about their feelings of worthlessness or to excessively seek reassurance (Hames et al., 2013). Thus, it is easy to see how depressive symptoms could impair social relationships with friends, family, and significant others. Furthermore, individuals experiencing depression tend to have more salient facial expressions of sadness, make less eye contact, hold their heads downward, speak more slowly and with less volume, use less inflection and make fewer gestures than non-depressed individuals (Hames et al., 2013). This is quite salient and easily perceptible by people engaging in social interactions with them. Additionally, depressed individuals tend to produce half the number of social or interpersonal actions, such as initiating conversation or responding to others, which generally makes social interactions less likely (Hames et al., 2013). Not only are individuals experiencing depressive symptoms less likely to engage in positive social behaviours, such as eye contact and initiating conversation, they also frequently tend to express their own negative self-evaluation and dysphoric feelings to others (Hames et al., 2013). This puts these individuals at a greater risk for social rejection and loneliness, which likely worsens depressive symptomology. Consequently, an increased severity in depressive symptoms will perpetuate these unfavourable social behaviours; thus, a cycle maintaining negative outcomes commences.

Two specific types of behaviour robustly associated with later impairment in social relationships are “interpersonal feedback seeking” and “excessive reassurance seeking” (Hames et al., 2013). Seeking out enhancing or self-verifying feedback from others that one is lovable and worthy is quite common behaviour for someone experiencing depressive symptoms. Typically, one’s significant other, friends, or family will reassure the individual at first.

However, this reassurance usually does not ease their worries or negative cognitions, thus their reassurance seeking behaviour may become more frequent and extreme. Eventually, this tends to alienate others. Consequently, the individual with depression confirms their maladaptive beliefs and cognitions about themselves and their self-worth (Hames et al., 2013). It is also quite common for an individual with depression to engage in negative feedback seeking. This is the tendency to actually pursue criticism and negative feedback from others. According to the self-verification theory, people seek feedback from others to confirm their self-concept, regardless of whether this concept is positive or negative (Hames et al., 2013). Despite the fact that the individual purposefully sought out this negative feedback, it still increases their negative affect, worsening their depressive symptoms (Hames et al., 2013). Overall, it appears that individuals experiencing depressive symptoms often interact with their environment in a manner that confirms their maladaptive cognitions; these interactions subsequently increase the likelihood of experiencing depressive symptoms, or the severity of those symptoms.

Mackinnon and colleagues (2012) also suggest that MDD should be conceptualized as a relational disorder. Intimate relationships and dyadic conflict may act as a maintaining factor for depressive symptoms. In a sample of married women with at least one child, Liu and Chen (2006) found that marital conflict predicted depressive symptoms two years later better than the previous severity of the individual's depressive symptoms. Symptoms such as irritability or lethargy may exacerbate relational conflict, thus worsening depressive symptoms. This can often impede treatment. Thus, according to Mackinnon et al. (2012), it is important to use an interactional and bidirectional model between dyadic conflict and depressive symptoms when conceptualizing MDD.

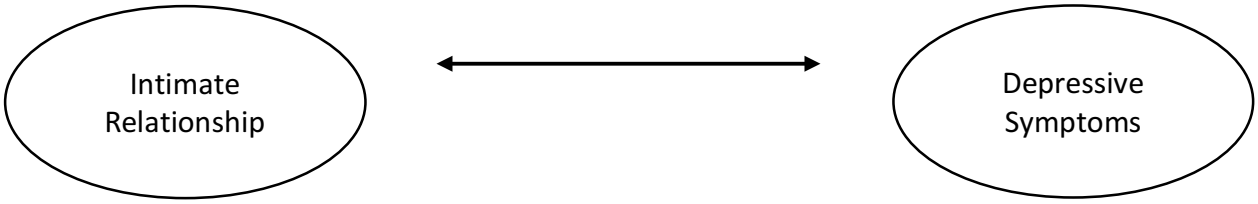

Figure 1. Bidirectional model between intimate relationships and depressive symptoms.

Childhood Maltreatment and Later Relationships

If depression were to be conceptualized in the context of one's social environment, the association between childhood maltreatment and both anxious and avoidant attachment, as well as intimate relationships, may be one explanation for the relationship between child maltreatment and later depressive symptoms. Considerable evidence exists that suggests childhood psychological maltreatment and neglect interferes with relational functioning in adulthood (Godbout, Lussier, & Sabourin, 2006; Riggs & Kaminski, 2010). Both men and women who experienced any type of childhood maltreatment and/or neglect reported higher rates of terminating relationships and higher divorce rates than controls in a longitudinal study that contacted children originally interviewed 25 years earlier in a metropolitan area in the Midwest of the United States (Colman & Widom, 2004). Additionally, women who experienced maltreatment and neglect as children were less likely to have positive perceptions of their current romantic partners. These women were also less likely to be sexually faithful in their relationships (Colman & Widom, 2004). Wolfe and colleagues (2001) found that adolescent girls with a history of childhood maltreatment (emotional, physical, and sexual abuse and neglect were included) had a higher risk of emotional distress and a greater risk of violent and nonviolent delinquency. Similarly, boys with a history of childhood maltreatment were 2.5-3.5 times more likely to report clinical levels of depression. However, boys also had a significantly higher risk of using threatening behaviours or of being physically abusive with their romantic partners

(Wolfe et al., 2001). Thus, a history of childhood maltreatment and neglect may impede the health and longevity of later adulthood romantic relationships, with important gender differences.

Child Maltreatment and Attachment Theory

Attachment theory suggests that people create expectations of themselves and others in relationships based on their experiences with their primary caregiver (Bowlby, 1982; Colman & Widom, 2004). Bowlby (1982) believed that children must form attachments with caregivers in order to survive. Furthermore, he postulated that different patterns of interactions between caregiver and child result in different attachment styles which influence how children engage with and view the world throughout their life. Unlike childhood models which focus primarily on the parent-child relationship, in adulthood, attachment style encompasses the different ways in which people approach their romantic relationships (Fraley, Hudson, Heffernan, & Segal, 2015). Bartholomew and Horowitz (1991) created a model of adult attachment categorizing individuals into four distinct types of attachment styles: *secure attachment* (comfortable with both intimacy and independence), *dismissing attachment* (high in avoidance and counter-dependent), *preoccupied attachment* (high in attachment anxiety and dependent on others), and *fearful attachment* (high in both avoidance and anxiety). However, more recently, research suggests that attachment may be better conceptualized as dimensional rather than categorical (Fraley, Hudson, Heffernan, & Segal, 2015). Attachment styles typically involve working models and representations of oneself and others (Bartholomew, 1990). An individual who is securely attached, and therefore low in both avoidant and anxious attachment strategies, will view significant others as both trustworthy and receptive, and view themselves as independent, and worthy of love, affection, and the support of others. A securely attached individual will

project autonomy and self-confidence; this individual will not be entirely independent or over dependent on others (Johnson, 2012). An individual who is insecurely attached will typically view significant others as unpredictable and oneself as unworthy of love and support. Insecurely attached individuals may utilize anxious and/or avoidant strategies in their significant relationships. An individual utilizing anxious attachment strategies may be fearful of rejection and abandonment, and will typically be highly dependent on their partner yet unremittingly question their partner's love (Fraley et al., 2011). An insecurely attached individual relying on avoidant attachment strategies will typically withdraw from important relationships altogether and will be uncomfortable with dependency and intimacy with others (Fraley et al., 2011). Fear and uncertainty often activate attachment strategies; therefore, when an individual is feeling threatened or unsure, they will often rely on their typical pattern of attachment: holding on regardless of the effectiveness or cost (anxious attachment) or pushing away despite the potential benefits of relying on others for support and closeness (avoidant attachment; Johnson, 2012).

Early life experiences, and especially child maltreatment, are known to affect one's attachment style later in life. Murphy and colleagues (2014) assessed attachment style in 75 mothers with the Adult Attachment Interview, a reliable measure of adults' strategies for identifying, preventing, and protecting the self from perceived dangers with regard to intimate relationships. Sixty-five percent of individuals who experienced more than four incidences of childhood trauma, as measured by the Adverse Childhood Experiences (ACE) questionnaire and including all types of abuse and neglect, were classified with an unresolved or discordant style of adult attachment (which in this study, meant that raters categorized these individuals as 'unresolved regarding past loss or trauma or can't classify'). Murphy et al. (2014) also found an absence of emotional support during childhood increased the probability of an insecure

attachment style during adulthood. Briere and colleagues (2012) used the Psychological Maltreatment Review (PMR; an instrument for measuring child psychological abuse, psychological neglect, and psychological support by both maternal and paternal figures) and found that childhood maltreatment predicted adult attachment in a mixed sample composed of both men and women recruited on an online psychology website and through an introductory psychology course at a midsize Canadian university. Specifically, paternal neglect and maternal psychological abuse was predictive of attachment anxiety. A lack of parental support was correlated with attachment avoidance.

The attachment style of individuals with a history of childhood maltreatment may subsequently affect how these adults experience intimate relationships (Holland, Fraley, & Roisman, 2012). In a study conducted by Holland and colleagues, the relationship functioning of heterosexual couples between the age of 18 and 25 was assessed. Individuals who self-reported attachment-related anxiety described their relationships as being of lower quality. Additionally, independent observers rated these couples as having less positive interactions than couples where both partners reported a secure attachment style. Therefore, attachment style may significantly impact an individual's beliefs about and behaviours in their current relationship. Riggs, Cusimano, and Benson (2011) conducted a study with college students in heterosexual couples. A personal history of childhood psychological maltreatment, without controlling for other types of maltreatment, was associated with poor relationship adjustment in these couples. Additionally, current attachment strategies were associated with their perception of their relationship functioning. The attachment style of one partner was also found to impact the other partner's relationship satisfaction and his or her own behaviour within the relationship. Specifically, individuals who had a partner with an avoidant insecure pattern of attachment

typically experienced enmeshment, fears of abandonment, and behaved in a dependent manner. Using the Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006), which is a statistical model that accounts for how each member of a dyad impacts each other, Riggs and colleagues also found that both actor (i.e., the individual in the study) anxious attachment and actor avoidant attachment mediated the relationship between actor child psychological maltreatment and dyadic adjustment. However, partner (i.e., the individual's romantic partner) avoidant attachment significantly mediated the relationship between partner child psychological maltreatment and dyadic outcomes, but partner anxious attachment did not. Thus, childhood psychological maltreatment has an adverse impact on attachment styles across the lifespan, which subsequently play a major, yet differing, role in dyadic adjustment for each individual in the dyad.

Conversely, relationship satisfaction and functioning may significantly impact one's attachment style. Although evidence suggests that attachment is quite stable throughout childhood and adolescence, for those who are insecurely attached, the shift to a secure attachment style later in life is very possible (Crowell, Treboux, & Waters, 2002). In Crowell and colleague's investigation of attachment stability, 157 couples who were married over the course of the study were examined. Of those young adults, 64% of those classified as having an insecure attachment style 3 months before marriage were classified as securely attached 18 months after marriage. Thus, it is possible that with the consistent and positive influence of an attachment figure different from the childhood attachment figure, an individual can shift from insecurely to securely attached (Crowell et al., 2002). Perhaps relationship satisfaction and functioning can actually influence one's attachment style.

Attachment and Intimate Relationships as Intervening Variables between Childhood Maltreatment and Depressive Symptoms

Some literature examining intimate relationships and interpersonal functioning as an explanatory variable for the relationship between childhood maltreatment and depressive symptoms exists. Massing-Schaffer, Liu, Kraines, Choi, and Alloy (2015) examined three interpersonal risk factors, which are common in individuals with depression, as mediators between childhood emotional maltreatment and adult depressive symptoms. Excessive reassurance seeking, negative feedback seeking, and rejection sensitivity were the proposed mediators. Excessive reassurance seeking and negative feedback seeking were discussed previously. Rejection sensitivity is a construct describing the tendency of individuals with depression to anxiously expect, perceive, and overreact to social rejection. These interpersonal risk factors were examined in 185 male and female undergraduate students on two different time points in a four-month time period. All three interpersonal variables were positively associated with depression. Rejection sensitivity and negative feedback seeking were significant mediators of the relationship between childhood psychological maltreatment and later depressive symptoms. Therefore, these interpersonal risk factors may be one explanatory process that accounts for the relationship between childhood maltreatment and depression.

Wright, Crawford, and Del Castillo (2009) examined how relational schemas may explain the relationship between childhood psychological maltreatment and neglect and later depression. Childhood psychological maltreatment and neglect often consist of constant criticism, disapproval, rejection, insults, and being ignored. Consequently, the authors theorized that this type of feedback is likely to have a long-term impact on children if it is internalized into global, negative beliefs about their own self-efficacy. Accordingly, both childhood

psychological maltreatment and emotional neglect were associated with later depressive symptoms. Additionally, maladaptive schemas, including vulnerability to harm, self-sacrifice, and defectiveness/shame were associated with a higher number of depressive symptoms. Subsequently, these maladaptive schemas were significant mediators for the relationship between childhood psychological maltreatment and neglect and later depressive symptoms. Thus, early relations with caregivers may contribute to the development of internal working models of the self and the self-in-relation to others. This internal working model influences later cognitive schemas and psychological distress. Although these schemas were not examined in relation to their effect on interpersonal relationships, it is likely they could affect adult intimate relationships and subsequently have an additive and/or interactional effect on depressive symptoms.

Hankin (2005) examined insecure attachment, negative cognitions and negative life events as potential mediators for the relationship between childhood maltreatment and depressive symptoms in young adulthood. The Adult Attachment Questionnaire (AAQ) was used to determine whether participant's attachment style was anxious, avoidant and/or secure. Childhood maltreatment, which included emotional, physical and sexual abuse, was predictive of both anxiety and depressive symptoms in adulthood. Childhood emotional abuse was found to be significantly predictive of insecure attachment, negative cognitive styles, and negative life events. Furthermore, insecure attachment and negative cognitive styles were partial mediators of the relationship between childhood emotional abuse and later depressive symptoms. Negative life events were considered a 'complete' mediator for the relationship between childhood emotional abuse and adult depressive symptoms.

Widom, Czaja, Kozakowski and Chauhan (2017) examined adult attachment style as a mediator for the relationship between childhood neglect and physical abuse and later psychological correlates. The study surveyed 650 adults with a mean age of 41 who retrospectively reported on childhood abuse and neglect. The RSQ, with questions very similar to the Experiences in Close Relationships Scale were used to assess both anxious and avoidant attachment on two continuous dimensions (Widom et al., 2017). Childhood physical abuse was found to be associated with an anxious attachment style, whereas childhood neglect was associated with both anxious and avoidant attachment. Both anxious and avoidant attachment predicted higher levels of depression and anxiety, and lower levels of self-esteem. However, attachment anxiety accounted for part of the relationship between childhood neglect and mental health outcomes.

Lastly, Bifulco and colleagues (2006) examined adult attachment style as a mediator for the relationship between childhood adversity and adult depression. The Attachment Style Interview (ASI) and the Childhood Experience of Care and Abuse (CECA) were administered in addition to a Structured Clinical Interview for the DSM-IV (SCID) to determine levels of both depression and anxiety in 154 women from a community sample. Insecure attachment styles were associated with higher levels of psychopathology, including depression. Specifically, a fearful attachment style was significantly associated with Major Depressive Disorder. An angry-dismissive attachment style was significantly associated with Generalized Anxiety Disorder. Both types of attachment -- fearful and angry-dismissive styles -- significantly mediated the relationship between childhood adversity and depression. Thus, attachment style is an important framework for understanding how childhood maltreatment perpetuates a vulnerability to psychopathologies, specifically mood disorders. It is important to note that this study

characterized childhood adversity as physical abuse, sexual abuse, psychological abuse, and neglect into one single variable; therefore, differences in attachment styles and later psychopathologies were not differentiated based on the type of abuse an individual experienced. Although this is problematic in some regards, these types of abuse do tend to co-occur in real life; thus, isolating these experiences may not always accurately reflect reality for many individuals. Additionally, in this study, attachment style was measured categorically and not on a continuum of strategies. Furthermore, the influence of intimate relationships on attachment, and how this subsequently impacts the role of attachment in explaining the association between maltreatment and depression, has yet to be examined in one comprehensive model.

Current Study

The current study seeks to conceptualize depression as a relational disorder that is strongly influenced by one's social relationships and perceptions. Successively, the goals of the current study are to: 1) Examine the association between CPM and CPN, while controlling for child physical and sexual abuse, on depressive symptoms in adulthood; 2) Examine adult attachment anxiety and avoidance as mediators of the relationship between CPM, CPN and depressive symptoms; 3) Examine whether relationship status and relationship satisfaction are moderators for this relationship and; 4) Provide additional information regarding potential solutions and interventions for individuals with a history of child maltreatment who currently are experiencing depressive symptoms and/or relationship difficulties.

The current predictions are, in part, intended to confirm pre-existing findings in the literature. However, some hypotheses have not yet, to my knowledge, been examined in an empirical setting. Pre-existing literature has found that both childhood psychological maltreatment and neglect predict depressive symptoms in adulthood. Additionally, child

maltreatment has been associated with insecure attachment in adulthood; specifically, CPM has been associated with attachment anxiety but not avoidance and CPN has been associated with attachment avoidance and anxiety (Muller et al., 2012; Widom, Czaja, Kozakowski & Chauhan, 2017). However, in a preliminary analysis of the current data set, CPN was found to be predictive of avoidant attachment, but not anxious attachment (Rodd, Mirotchnick, & Runtz, 2016). Given this, and the literature and theories presented, the current study made the following predictions:

Hypotheses

Goal 1: Child Maltreatment, Depression, and Attachment

1. **Hypothesis one:** While controlling for other types of abuse, both CPM and CPN will independently predict a higher level of depressive symptoms in adulthood.
2. **Hypothesis two:** CPM will predict higher levels of attachment anxiety.
3. **Hypothesis three:** CPN will predict higher levels of attachment avoidance.

Goal 2: Attachment Anxiety and Avoidance as Mediators

If CPM and CPN significantly predict either anxious and/or avoidant attachment, they will be examined as potential mediators for the relationship between CPM and CPN and later depressive symptoms.

1. **Hypothesis four**: Anxious attachment will mediate the relationship between CPM and later depressive symptoms.
2. **Hypothesis five:** Avoidant attachment will mediate the relationship between CPN and later depressive symptoms.

Goal 3: Role of Intimate Relationships

1. **Hypothesis six:** Being in an intimate relationship will act as a moderator for the relationship between child maltreatment and attachment. Specifically, if an individual is currently in a romantic relationship, child psychological maltreatment will no longer predict anxious attachment and child psychological neglect will no longer predict avoidant attachment. However, for individuals who are not currently in a romantic relationship, child maltreatment will still predict attachment, and thus, attachment will still act as a significant mediator for the relationship between child maltreatment and depressive symptoms (see *Figure 2&3)*.
2. **Hypothesis seven:** Among those currently in a romantic relationship and given significant mediational relationships are found as predicted by Goal 2, it is predicted that the mediational relationship between CPM, anxious attachment, and subsequent depressive symptoms will be moderated by relationship satisfaction (see *Figure* 4).
3. **Hypothesis eight:** Relationship satisfaction will also act as a moderator for the mediational relationship between CPN, avoidant attachment, and depressive symptoms (see *Figure* 5). Thus, for individuals who are high in relationship satisfaction, childhood maltreatment will not predict current attachment and the indirect effects of childhood maltreatment on depressive symptoms through attachment will be reduced. However, for individuals who are in a relationship but low in relationship satisfaction, childhood maltreatment will more strongly predict attachment and the indirect effects of attachment as a mediator between childhood maltreatment and adult depressive symptoms will be strengthened.

Although ample evidence exists that suggests attachment is predictive of relationship satisfaction and/or functioning, it is important to determine whether and how relationship status and/or functioning can influence attachment (Holland, Fraley, & Roisman, 2012; Li & Chan, 2012). Past literature suggests that attachment insecurity may not always be stable over time, such that when individuals are in long and healthy relationships, they may shift towards secure attachment (Crowell, Treboux, & Waters, 2002). The potential differences in how maltreatment affects attachment for individuals who are in romantic relationships compared to individuals who are not currently in a romantic relationship is important to investigate in the current sample. Additionally, examining individuals between the age of 18 and 25 will offer a unique perspective regarding how relationships during emerging adulthood specifically may impact the relationship between child maltreatment, attachment, and subsequent depressive symptoms.

Furthermore, the influence of relationship satisfaction on the association between maltreatment and attachment is a hypothesis not previous examined. Attachment strategies are typically activated during times of distress and fear (Johnson, 2002). Therefore, if an individual is in a satisfying relationship, they may not currently be utilizing their attachment strategies or those attachment strategies may change over time to become more secure. However, if an individual is currently in a very unsatisfactory relationship, they may be more heavily relying on their anxious or avoidant attachment strategies, thus strengthening the relationship between childhood maltreatment and an insecure attachment, and the subsequent association with depressive symptoms. In sum, this sample will allow us to examine how, during this unique and sensitive time period, romantic relationships may influence impact the connection between childhood maltreatment and depressive symptoms in the context of attachment anxiety or avoidance.

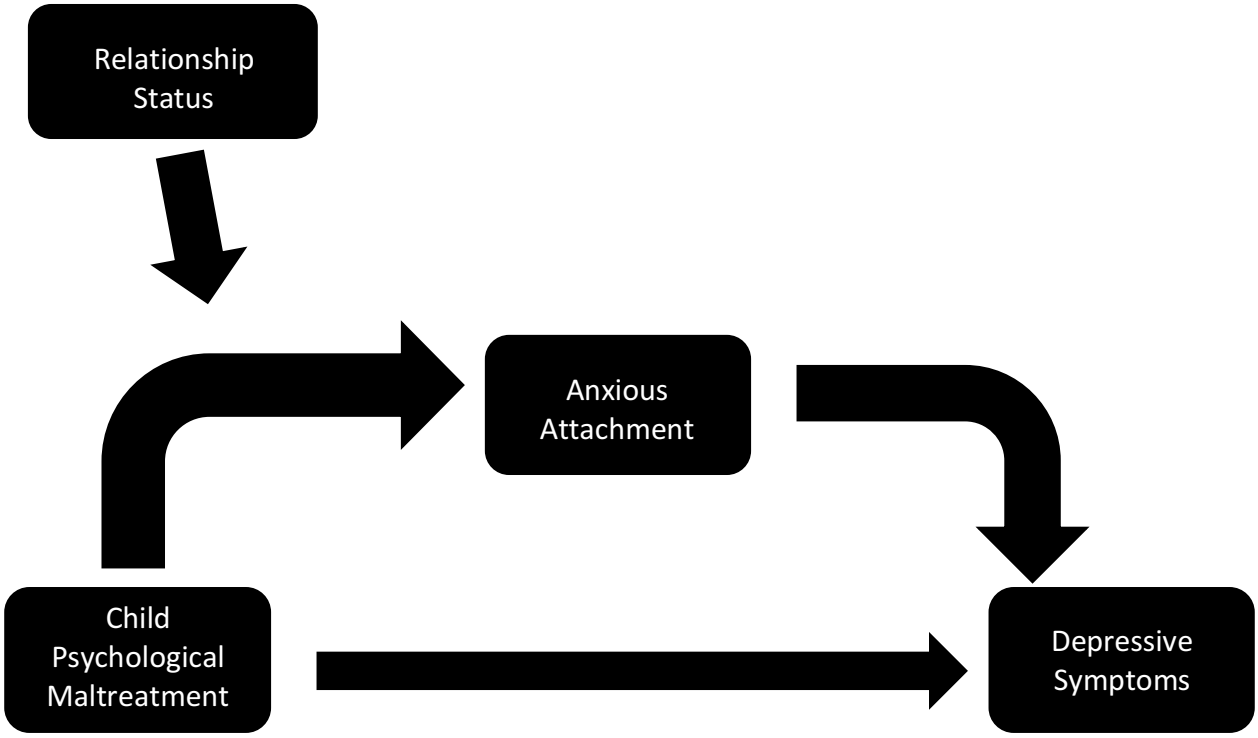

Figure 2. The predicted moderated mediation between CPM and later depressive symptoms. Attachment is expected to be influenced differently as a function of whether the individual is currently in a romantic relationship or not. This may subsequently impact depressive symptoms.

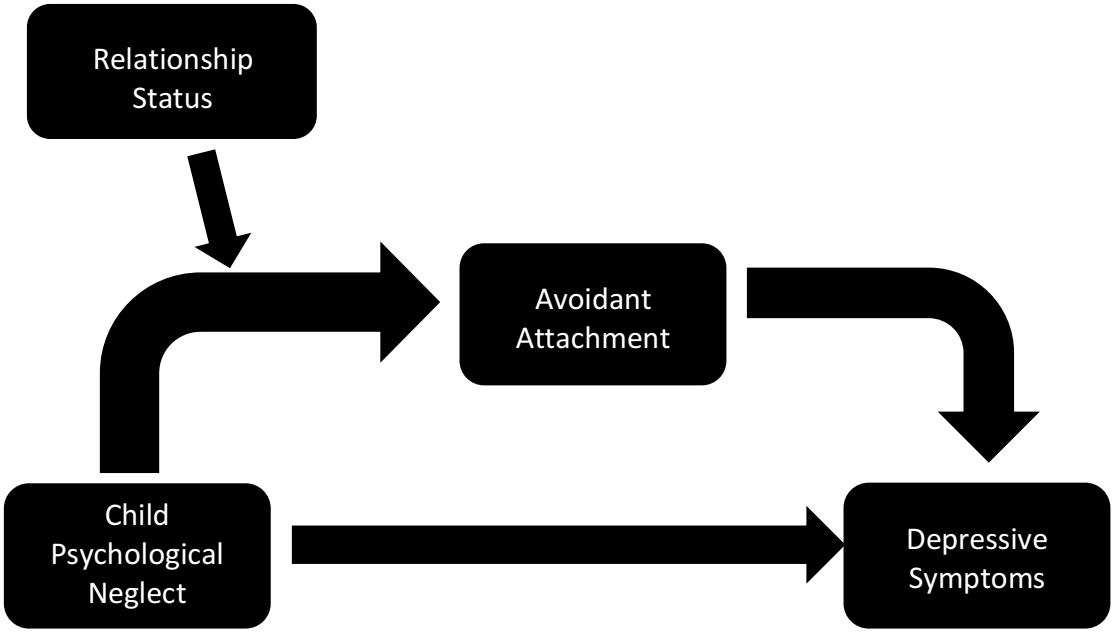

Figure 3. The predicted moderated mediation between CPN and later depressive symptoms as a function of whether the individual is currently in a romantic relationship or not.

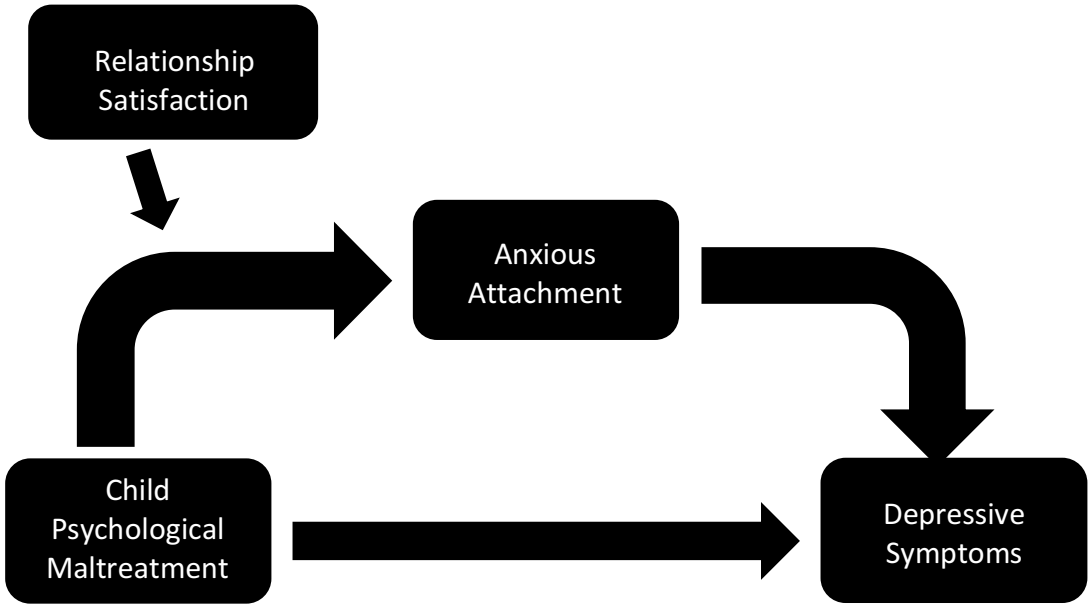

Figure 4. The predicted moderated mediation between CPM and later depressive symptoms in individuals who are currently in a romantic relationship. Attachment is expected to be influenced differently as a function of whether how satisfied the individual is in their romantic relationship. This may subsequently impact depressive symptoms.

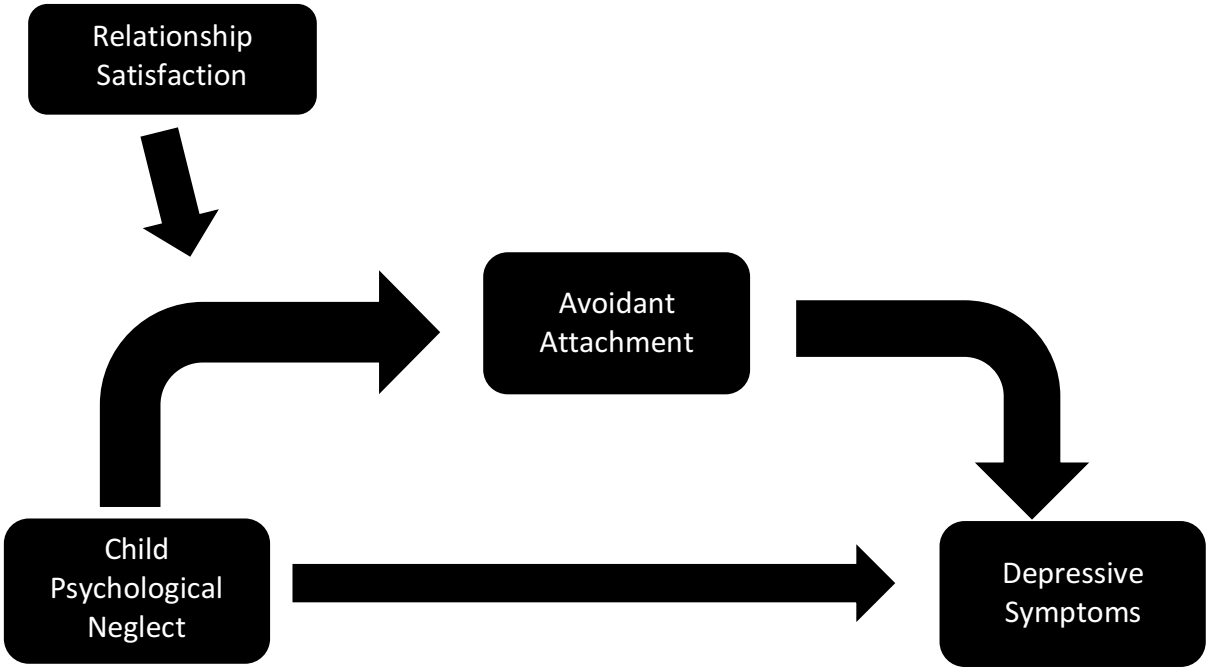

Figure 5. The predicted moderated mediation between CPN and later depressive symptoms. The relationship between CPN and an avoidant attachment later in life is expected to be impacted by how satisfied the individual is in their current romantic relationship.

Contributions of the Study

Unfortunately, CPM and CPN are incredibly common (Fallon et al., 2010). These early life experiences often shape the course and lives of the children they touch. In the wake of child maltreatment and confronting it later in life, it is important to consider whether these individuals will stand alone or stand with others (Johnson, 2002). Abuse by trusted loved ones and/or caregivers is isolating and can shatter one's expectations and perceptions of the world and important relationships. Elucidating the relationship between maltreatment during childhood and later negative outcomes, such as depression, may allow us to more effectively intervene. If people can face their history of maltreatment with important loved ones, form and maintain healthy and satisfying intimate relationships, and remain socially connected with family and friends, they will have a better chance at healing (Johnson, 2002). It is important to

acknowledge that healthy social connections make us stronger; we crave them (Hames et al., 2013). In fact, feeling lonely and isolated is an equally strong predictor of health and mortality as smoking and other well-established health correlates (Holt-Lunstad, Smith, & Layton, 2010). Attachment style and relationships are undoubtedly interconnected (Crowell, Treboux, & Waters, 2002; Holland, Fraley, & Roisman, 2012). Furthermore, relationships and social connections cannot be conceptualized in isolation from depressive symptoms (Mackinnon et al., 2012). We must view these variables with a bi-directional lens to justly understand the full scope of how child maltreatment impacts later depressive symptoms.

Recently researchers have begun to examine interpersonal risk factors, attachment, and cognitive schemas as potential routes for the development of psychopathology, specifically depression, after childhood maltreatment. However, there are still questions to answer in regard to the role of attachment and intimate relationships, specifically for those with a history of CPM and CPN. The current study seeks to build upon our current understanding of the effects of childhood maltreatment on later adult functioning, further examining how maltreatment in childhood can lead to depressive symptoms in early adulthood. If anxious and avoidant attachment strategies, and the impact of current relationship status and satisfaction, are viable explanations for the link between CPM, CPN, and later depressive symptoms, interventions could target depressive symptoms by teaching strategies for successful relational adjustment. Subsequently, this could lead to better adjustment in adult relationships; therefore, reducing depressive symptoms in these individuals.

Method

Participants

The current study will use data collected for a project conducted by Dr. M. Runtz, called the *Life Events, Health, and Relationships (LEHR)* study, which assessed the long-term health consequences of interpersonal victimization across the lifespan. The Human Research Ethics Board at the University of Victoria approved the study, which attained a sample of 770 men and women between the ages of 17 to 53 years. However, in the current study, I will only use participants who were between the ages of 18-25 years (N = 676, 73.5% female, 26.5% male). Additionally, in my final model examining the role of relationship satisfaction, only participants who reported currently being in a romantic relationship and completed the DAS-4 (relationship satisfaction) measure will be included (N = 329; 78% female, 22% male). Participants were undergraduate students at the University of Victoria, with a mean age of 20.59 years in the overall sample. They were recruited through an announcement on the Psychology department's online research participation system (SONA; with a total of approximately 1000 students enrolled in Psychology 100 each academic year). The participants in the overall sample were primarily Caucasian (68 %), heterosexual (94%), and native English speakers (91%). Additionally, 63% of students had a family of origin income greater than $50,000 per year. Participants were awarded bonus points toward their course grade in return for their participation. More detailed demographic characteristics of the overall sample are presented in Table 1.

Procedure

The information for this study was posted on the online participant research program with announcements for several other studies conducted within the Psychology department. The

announcement for this study informed students that it would take approximately 90 minutes to complete and that it was intended to examine the associations between interpersonal experiences and subsequent physical and psychological health, as well as to assess the utility of a new measure of adult attachment. Students were able to sign up online to attend one of several testing sessions at an on-campus computer lab. Students completed the questionnaires at individual computer stations which were spaced out to ensure confidentiality between participants. Each study session consisted of a maximum of 17 people, with an average range of about 8 to 12 students per session. At the beginning of each session, participants were asked to read an online informed consent form (see Appendix A), and clicked on the appropriate box in order to provide their consent and to proceed to the questionnaires. Upon completion, participants viewed an online debriefing form (see Appendix B) and were also given a paper copy. The debriefing form contained information regarding the purpose of the study and also provided students with the researchers' contact information and other mental health resources available to them.

Measures

All measures of childhood abuse, relationship satisfaction, and attachment that were of interest in this study are discussed below. Descriptive statistics for each measure are presented in Table 2.

Demographic questionnaire. Descriptive information about the sample was collected using several questions about age, gender, sexual orientation, relationship status, primary language, ethnicity, education, parental education, and income (see Appendix C).

Psychological Maltreatment Review (PMR). Child psychological maltreatment and child psychological neglect were assessed using the PMR (see Appendix D; Briere et al., 2012).

The PMR is a 30-item measure examining psychological maltreatment before the age of 18. Items are answered separately for each parent (i.e., the individual's most significant maternal and paternal figure during childhood). However, for the purposes of the current study, scores for each parent were combined to make one overall score for each subscale. There are three subscales including parental psychological abuse, psychological neglect, and psychological support. However, for the purposes of the current study, only items from the psychological abuse and psychological neglect subscales will be included. Each subscale contains 10 items measured on a scale ranging from 0 (*never)* to 6 (*over 20 times a year).* Subscales are hereafter referred to as CPM (for child psychological abuse) and CPN (child psychological neglect). Scores for each subscale are summed with a possible range from 0 to 60. For all subscales, participants are asked, "When you were 17 or younger, how often did the following things happen to you in the average year?" Two sample items from the psychological abuse subscale are: "Called you names" and "Ridiculed or humiliated you." Two sample items from the psychological neglect subscale are: "Didn't take care of you when they should have" and "Let you down." The psychological neglect subscale is an especially important contribution to the current study as it specifically targets psychological neglect. Many of the pre-existing studies use neglect as an umbrella term that subsumes many different types of neglect, including physical and educational neglect (Colman & Widom, 2004; Murphy et al., 2014). However, the effects of a lack of supervision or the inability to provide educational opportunities are likely distinctly different compared to a lack of affection and engagement with the child. Each subscale was found to have good structural validity and construct validity in previous studies (Briere et al., 2012). Additionally, each subscale had good internal consistency in past research, with Cronbach's alphas greater than or equal to .89 (Briere et al., 2012). Furthermore, Briere

and colleagues (2012) found that, as expected based on previous research, each subscale was significantly correlated with both anxious and avoidant attachment in close relationships (as measured by the ECR). In the current sample, the PMR for both parents combined had an excellent reliability for child psychological abuse (α = .93) and for child psychological neglect (α = .95).

Family Violence Screening Questionnaire (FVSQ). The FVSQ was used to control for childhood physical abuse (CPA) in the current study (see Appendix E). The FVSQ is a measure that screens for three types of family violence, including: physical abuse during childhood, witnessing parental domestic violence, and the occurrence of intimate partner violence in current adult romantic relationships. In the current study, only the two items assessing child physical abuse (CPA) were analyzed. These two items were adapted from a screening questionnaire created by Leserman, Drossman, and Li (1995) which examined physical abuse in a primary health care setting. The first item asks the individual to rate the number of times a parent hit, kick, or beat them in an average year before age 17. The other item asks the individual to rate the number of times their life was seriously threatened by a parent in an average year before age 17. These two items were measured on a scale ranging from 0 (*never)* to 6 (*more than 20 times per year)*. Participants rate each item twice; once for their paternal figure and once for their maternal figure. The measure was found to have acceptable levels of test-retest reliability and acceptable validity as measured by agreement between in this questionnaire and an interview of physical abuse. In the current study, the two items relating to CPA were summed with scores ranging from 0-12 for each parent. Then, scores for each parent were combined to make one total CPA score. The FVSQ CPA score for both parents combined had acceptable reliability (α = .61) in the current sample.

Childhood Sexual Abuse Questionnaire (CSA). To control for experiences of childhood sexual abuse, questions adapted from a questionnaire by Leserman et al., (1995) was used (see Appendix F). The original questionnaire, which was mentioned above, had good levels of test-retest reliability and good validity, as measured by agreement between the questionnaire and an interview on sexual abuse. The current study consisted of seven yes or no questions. Each question had several follow up items, which asked about the individual's age at the time of the event, the age and gender of the offender, how the individual knew the offender, how often these incidents occurred, and whether the offender used physical force. In the current study, participants were given a continuous score ranging from 0-3 based on the items they endorsed relating to experiences occurring before age 14. A score of 0 was given if the participant did not endorse any CSA items, a score of 1 was given if they endorsed items related to non-contact CSA (e.g. exposure or threat), a score of 2 was given if they endorsed items that involved unwanted contact (e.g. unwanted physical touching), and a score of 3 was given if they said yes to any items about forced penetration (oral, anal, or vaginal). Some sample items include: "Has anyone ever threatened to have sex with you when you did not want this?" and "Has anyone ever forced you to have oral sex when you did not want this?" The CSA measure had high reliability (α = .82) in the current sample.

Experiences in Close Relationships Questionnaire (ECR). Adult romantic attachment was assessed using the ECR (see Appendix G; Brennan, Clark, & Shaver, 1998). The ECR contains 36-items pertaining to how individuals feel in close relationships. These 36-items can be divided into two dimensions: attachment avoidance and attachment anxiety. Both dimensions consist of 18-items measured on a scale ranging from 1 (*strongly disagree)* to 7 (*strongly agree).* Participants are instructed to answer based on how they generally feel in all romantic

relationships, not just with their current partner. Two sample items from the anxious dimension are "I worry about being abandoned," and "My desire to be very close sometimes scares people away." Brennan et al. (1998) found the anxious dimension to have excellent internal consistency reliability with a Cronbach's alpha of .91. Two sample items from the avoidant dimension are "Just when my partner starts to get close to me I find myself pulling away," and "I find it difficult to allow myself to depend on romantic partners." The avoidance dimension also had excellent internal consistency reliability with a Cronbach's alpha of .94 (Brennan et al., 1998). Each item is summed to yield a total score for each subscale, with a range from 18 to 126 for each subscale. A higher score is indicative of greater attachment anxiety or avoidance. Several studies have found the ECR to have good psychometric properties and good test re-test reliability (Brennan et al. 1998; Schirmer & Lopez, 2001). Schirmer and Lopez compared the correspondence between the ECR and the Relationship Questionnaire (RQ), a well-established measure of adult attachment. The results of a one-way MANOVA indicated that the categories of the RQ are generally comparable to the continuous scale of the ECR. For example, individuals who were categorized as secure on the RQ score significantly lower on the avoidance dimension of the ECR compared to adults categorized by the RQ as dismissive or fearfully attached. In the present sample, the ECR had excellent internal consistency reliability for attachment anxiety (α = .93) and excellent internal consistency reliability for attachment avoidance (α = .93).

Dyadic Adjustment Scale – Brief Version (DAS-4). Relationship satisfaction in current intimate relationships was assessed using the DAS-4 (see Appendix H; Sabourin, Valois, & Lussier, 2005); the four-item scale is based off the items from the Satisfaction scale on the original Dyadic Adjustment Scale (Spanier, 1976). The first three items are scored from 0

(*never)* to 5 (*all the time)*. A sample item is: "In general, how often do you think that things between you and your partner are going well?" The last item measures individuals' happiness in their current relationship; responses are scored from 0 (*extremely unhappy*) to 6 (*perfect)*. The four items are summed to create a continuous relationship satisfaction score, with higher scores suggesting greater relationship satisfaction. Scores falling under 12 are categorized as "clinically distressed," scores from 12-14 are categorized as "borderline," and participants with scores above 14 are considered "non-distressed." Sabourin et al. (2005) found the DAS-4 to be very stable across a two-year period, with reliability greater than .81 for both distressed and non-distressed couples. Additionally, the DAS-4 was better at predicting couple dissolution across two years than the original DAS-32. In the present sample, the DAS-4 had good reliability (α = .76).

Trauma Symptom Inventory – Depression Scale (TSI-2). Current depressive symptomology (over the past six months) was assessed using the TSI-2 Depression Scale of the TSI-2, an expanded and updated version of the original TSI, which is an established measure of symptoms and behaviours related to traumatic experiences (See Appendix I; Briere, 2011). The TSI-2 is a 136-item measure examining various symptom clusters related to the psychological effects of trauma and adverse events. Specifically, the TSI-2 has 12 clinical scales, for example: depression, somatization, dissociation, intrusive experiences, and suicidality. Each scale consists of 10 items, measured on a 4-point Likert-type scale from 0 (*never)* to 3 (*often)*. Godbout, Hodges, Briere, and Runtz (2016) found that four factors encompassing the 12 clinical scales (posttraumatic stress, externalization, self-disturbance, and somatic preoccupation) best represented the different dimensions of possible trauma outcomes. Additionally, they found that all four factors were significant predictors of trauma and/or very distressing life events. In the

current study, only the Depression Subscale of the TSI-2 was used. The Depression Subscale measures depression in regard to both mood and depressive cognitive distortions. Participants are asked how often they have experienced certain depression-related emotions, cognitions, and behaviours within the last six months. Two sample items are: "Feeling so depressed that you avoided people," and "Hating yourself." A high score on this subscale is indicative of frequent feelings of sadness, as well as an overall feeling of being depressed. According to Briere (2011), the clinical Depression scale had excellent reliability (α = .94) and excellent test-retest stability (r = .94). In the current study, the Depression scale had excellent reliability (α = .93).

Results

Analyses were conducted as follows: first, missing data procedures are presented for each measure in the study. Then, child maltreatment prevalence rates are presented for CPA, CSA, CPM, and CPN. Next, demographic variables, such as gender, ethnicity, and sexual orientation, were examined to determine if they were significantly associated with depressive symptoms or attachment anxiety and avoidance. Additionally, continuous measures (depressive symptoms, attachment, maltreatment, and relationship satisfaction) were examined to determine whether significant correlations between measures exist. For the main analyses, goal one was tested by performing multiple regressions to establish whether childhood psychological maltreatment and childhood psychological neglect independently predict adult depressive symptoms, while controlling for demographic covariates. Additionally, CPM and CPN were examined to determine whether they significantly predict both anxious and avoidant attachment. Although problems with hierarchical regression have been well documented in the literature, the current study's strong theoretical basis for entering the current variables in their specific order ideally justifies the use of this methodology (Cohen & Cohen, 1983; Petrocelli, 2003). Specifically, problems regarding the order in which variables are entered into the model have been found to significantly influence the results (Cohen & Cohen, 1983). In the current study, demographic variables were entered in step one of the regression analysis, other types of maltreatment were entered in step two of the analysis, and the type of maltreatment (either CPM or CPN) being examined was entered in step three of the analysis. Demographic variables are typically entered in the initial step of the analysis (Cohen & Cohen, 1983). Variables entered into the analysis later, as independent variables, should not be a cause of a variable entered earlier (Cohen & Cohen, 1983). In the current study, it is unlikely that CPM or CPN independently caused other

types of abuse or demographic variables. Additionally, the current hypotheses sought to examine whether CPM and CPN were associated with depressive symptoms not only above and beyond the effects of related demographic covariates, but beyond the effects of other types of maltreatment. Thus, a hierarchical multiple regression is an appropriate data-analytic strategy. Goal two was tested by conducting the mediational analysis outlined by Hayes (2013) which uses OLS regression to determine how an antecedent (i.e., predictor) variable is associated with a consequent (i.e., outcome) variable through a mediating or intervening variable. In goal two, I sought to determine whether attachment could account for the established relationships between CPM and CPN and depressive symptoms. To test goal three, two moderated mediation analyses were conducted in accordance to the guidelines published by Hayes (2013). I used conditional process analysis to combine moderation and mediation analyses in order to disentangle whether the overall effect of the antecedent (child maltreatment) on the consequent (depressive symptoms), through the mediator (attachment) is impacted by different levels of a moderator. Specifically, the first moderated mediation was conducted to determine whether relationship status moderated the association between child maltreatment and insecure attachment, and subsequently, impacted the greater mediational model examined in goal two (see *Figure 4*). The second moderated mediation was conducted to examine relationship satisfaction as a moderator of the relationship between child maltreatment and attachment amongst participants currently in a relationship (see *Figure 5*).

Missing Data Procedures

The following variables were evaluated for missing data through SPSS 24: Child physical abuse (CPA) by both parents, total child sexual abuse (CSA), total psychological maltreatment (CPM) by both parents, total psychological neglect (CPN) by both parents, ECR anxious

attachment, ECR avoidant attachment, depressive symptoms, and total relationship satisfaction. All variables of interest had less than 3% missing data, with the exception of the ECR anxious and avoidant attachment scales (Brennan, Clark, & Shaver, 1998), where nearly 15% of participants left at least one question incomplete.

Victimization measures. Missing data on the victimization measures were left blank, and totals were calculated based on existing data in an attempt to authentically reflect participant's experiences. Questions inquired as to whether an abusive experience during childhood had occurred; thus inputting a zero for unanswered questions may not account for an abusive experience that occurred, but the participant was hesitant to report. Additionally, using a missing data replacement method may overestimate the abusive experiences of participants. Thus, total scores for abusive experiences were calculated based on whatever data was provided by each participant, unless they did not answer full scales for either parent. Due to this, total scores were calculated for every participant (N= 676) for CPM and CPN. Total scores were calculated for 98.4% (N = 665) of the sample for CSA and for 99.9% (N = 675) of the sample for CPA.

Attachment measures. For the ECR, 124 participants had missing data, such that at least one question was left incomplete (17.3%). Specifically, on the anxious attachment scale, 99 (13.9%) participants had at least one incomplete question. For the avoidant attachment scale, 76 (10.6%) participants had missing data on at least one question. Fifty-nine participants were removed as more than 50% of the questionnaire was left incomplete[1]. Of those remaining that

[1] There were no participants who were missing 45-50% of ECR data, five participants had 31-44% of the ECR missing and five participants had 17-28% of the ECR missing. The EM procedure to impute missing data did not significantly change means or associations between variables in comparison to when a listwise deletion was conducted.

still had some missing data (65 participants), the majority had less than 15% missing (N = 55, 85%). It is believed there may have been a larger proportion of missing data on the ECR in comparison to other measures due to its placement amongst all the questionnaires. The ECR was one of the last measures given, spanning from page 208-215 in a 219-page set of questionnaires. Thus, it is likely that some participants may have stopped answering due to fatigue.

Little's Missing Completely at Random (MCAR) test was non-significant for the anxious attachment scale, $\chi 2 = 706.13$, df = 682, $p = 0.25$. Therefore, an expectation maximum (EM) procedure to find the maximum likelihood estimates was used to calculate missing data for participants who completed at least half of the questionnaire. However, Little's MCAR test was significant for the avoidant attachment scale, $\chi 2 = 987.43$, df = 421, $p = .000$. Thus, the missing data is not missing completely at random. It may be missing at random (MAR) or missing not at random (NMAR). However, there is no absolute way to test whether data is MAR (Schafer & Graham, 2002). It is possible that data is MAR, meaning that the 'missingness' of the avoidant data is dependent on some other variable, such as abuse severity. However, it is also possible that data may be NMAR, such that the 'missingness' of the data is dependent on the value of the variable with missing data. Specifically, the probability of a participant not responding to a question on the avoidant attachment scale may be dependent on the extent of their avoidant attachment style. Although there are no ideal missing data replacement methods for NMAR data, some MAR analysis methods may still be unbiased with NMAR data despite a MAR assumption (Schafer & Graham, 2002). Therefore, an expectation maximum (EM) procedure to find the maximum likelihood estimates was used to calculate missing data for participants who completed at least half of the questionnaire (Schafer & Graham, 2002).

Depressive symptoms measure. Eight participants had more than 20% missing data on the TSI-2 depression subscale, therefore, as recommended by Briere (2011), a listwise deletion was conducted such that these participants were removed from the data set. On the TSI-2 depression subscale, missing at random (MAR) analyses revealed that less than 1% of data for each question was missing. Little's Missing Completely at Random (MCAR) test was non-significant, $\chi 2 = 37.40$, df = 26, p = 0.069. Therefore, data is missing completely at random and an expectation maximization (EM) procedure was used to find the Maximum Likelihood (ML) estimates for missing data (Kang, 2013).

Relationship satisfaction measure. Four participants who did not complete at least 50% of the DAS-4 were removed from the overall sample. MAR analysis revealed that less than 1.5% of data was missing for each question. Little's MCAR test was significant, $\chi 2 = 31.33$, df = 8, p = 0.00, therefore data was not missing completely at random. An EM procedure was used to find ML estimates for missing data (Kang, 2013).

Means and Frequencies

Frequencies for demographic variables (ethnicity, language, annual income, etc.) are reported in Table 1. Mean scores and standard deviations were calculated for all continuous variables of interest (e.g., psychological maltreatment, relationship satisfaction, depressive symptoms, etc.) for both the entire sample, and the subsample of those participants who were in a relationship (see Table 2 and Table 3).

Table 1. *Selected demographic characteristics of participants in the overall sample and the subsample of those currently in a romantic relationship.*

Variable	*N* (overall sample)	*n*	%	*N* (sample in relationship)	*n*	%
Ethnicity	676			329		
Asian		108	16.0		40	12.2
African-Canadian		7	1.0		1	0.3
Caucasian		456	67.5		243	73.9
First Nations		3	0.4		1	0.3
Hispanic		12	1.8		9	2.7
Other		16	2.4		5	1.5
Mixed		74	10.9		30	9.1
Primary Language	676			329		
English		613	90.7		301	91.5
French		8	1.2		3	0.9
Spanish		10	1.5		7	2.1
Other		43	6.4		16	4.9
No answer		2	0.3		2	0.6
Annual Personal Income	676			329		
Less than $10,000		423	62.6		207	62.9
$10,000 - $19,999		128	18.9		65	19.8
$20,000 - $29,999		26	3.8		16	4.9
$30,000 - $39,999		10	1.5		4	1.2
More than $40,000		9	1.3		5	1.5
No answer		80	11.8		32	9.7
Sexual Orientation	676			329		
Heterosexual		638	94.4		309	93.9
Bisexual		24	3.6		14	4.2
Lesbian or Gay		8	1.2		3	0.9
No answer		6	0.9		3	0.9
Current Relationship Status	676			329		
In a relationship		333	49.3		329	100.0
Single		332	49.1			
No answer		11	1.6			
Parent's Education	676			329		
Some primary school		3	0.4		0	0.0
Some high school		20	3.0		12	3.6
Completed high school		49	7.2		21	6.4
Trade school		78	11.5		43	13.1
Some university		60	8.9		26	7.9
Undergraduate degree		202	29.9		103	31.3
Master's degree		163	24.1		77	23.4
Doctoral degree		44	6.5		20	6.1
Other professional degree		57	8.4		27	8.2

Parent's Annual Income	676			329		
Less than $50,000		110	16.3		53	16.1
$50,000 - $100,000		231	34.2		128	38.9
More than $100,000		263	38.9		118	35.9
No response		72	10.7		30	9.1

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

Table 2. *Descriptive statistics for entire sample (N = 676)*

Variable	*M*	*SD*	Range
Physical Abuse	0.91	2.14	0-14
Psychological Maltreatment	25.93	21.95	0-104
Psychological Neglect	17.70	21.90	0-114
Sexual Abuse	0.37	0.83	0-3
TSI-2 Depression	10.57	7.29	0-30
ECR Anxiety	62.63	19.34	18-116
ECR Avoidance	53.12	19.11	18-112

Table 3. *Descriptive statistics for those in a relationship (N=333).*

Variable	*M*	*SD*	Range
Physical Abuse	0.93	2.17	0-13
Psychological Maltreatment	24.67	21.76	0-104
Psychological Neglect	18.07	22.74	0-114
Sexual Abuse	0.46	0.92	0-3
TSI-2 Depression	9.60	6.94	0-30
ECR Anxiety	60.93	20.89	19-116
ECR Avoidance	45.63	17.53	18-104
Dyadic Adjustment Scale	16.23	2.95	6-21

Childhood Maltreatment Prevalence Rates

Child psychological maltreatment (CPM). The vast majority of participants (97%, n = 656) endorsed at least one item on the Psychological Maltreatment Review (PMR; Briere et al., 2012). The mean score for psychological maltreatment by a maternal parental figure was 13.6 (SD = 12.8). The mean score for psychological maltreatment by a paternal parental figure was 12.9 (SD = 12.3). The scores in the current sample were very similar to scores found in a previous study examining CPM in university students, where the mean score for CPM by a maternal figure was 14.6 (*SD* = 12.6) and the mean score for paternal CPM was 13.2 (*SD* = 12.1; Briere, Godbout, & Runtz, 2012). CPM is typically a pervasive pattern of behaviour by the caregiver that conveys to the child that he or she is worthless or unlovable. Consistent with the aforementioned chronic pattern of CPM, 35.5 % (*n* = 240) of participants reported that at least one type of psychologically abusive behaviour occurred more than 20 times in an average year. The most frequently endorsed item was "yelled at you," followed by "criticized you," and "insulted you." The least frequently endorsed item was "said you were stupid." The majority (88%) of participants reported having been yelled at by either their mother or father at least once in an average year. However, 18.8% (*n* = 127) of participants reported that their mother and 12.4% (*n* = 84) of participants reported that their father yelled at them over 20 times in an average year. Additionally, 11.2% (*n* = 76) of participants reported that their mother and 9.2% (n = 62) of participants reported that their father criticized them more than 20 times in a typical year. In contrast, 2.1% (*n* = 14) of participants said their mother and 1.9% (*n* = 13) of participants said their father called them stupid more than 20 times in an average year.

Child psychological neglect (CPN). Most participants (82.7%, *n* = 559) reported that at least one of their parental figures engaged in a minimum of one neglectful behaviour in the

course of a typical year. The mean score reported for maternal neglect was 8.3 (SD = 11.8) and the mean score reported for paternal neglect was 9.9 (SD = 12.5). Again, these scores are very comparable to a previous study examining university students which found a mean score for maternal neglect of 8.0 (*SD* = 10.8) and a mean score for paternal neglect of 9.8 (*SD* = 12.6) (Briere, Godbout, & Runtz, 2012). Similar to CPM, neglect is also considered a chronic and pervasive behaviour. In the current sample, 18.6% (n = 126) of participants reported a neglectful behaviour by a parent more than 20 times in an average year. The most frequently endorsed item was "let you down" followed by "didn't do things they said they would do for you," and "weren't around when you needed them." Thirty-one participants (4.6%) said their maternal parental figure and 36 (4.6%) participants said their paternal parental figure let them down more than 20 times in an average year. The item "weren't around when you needed them" was endorsed more for paternal parental figures than maternal parental figures. Specifically, 8.9% (*n* = 60) of participants reported their paternal figure was not there when they needed them more than 20 times a year. On the other hand, 5.2% (*n* = 35) of participants said their maternal figure was not there more than 20 times in an average year. The least frequently endorsed item was "didn't seem to love you." However, 11 participants (1.6%) said their maternal figure, and 20 participants (3%) said their paternal figure did not seem to love them more than 20 times in an average year.

Child physical abuse (CPA). In the current sample, about a quarter of participants endorsed at least one of the physical abuse items. That is, 24% (n = 162) indicated that their parental figure hit, kicked, or beat them at least once in a typical year. Seven participants (1%) reported that their maternal figure, and six participants (.9%) reported that their paternal figure hit, kicked, or beat them more than 20 times in an average year. Notably, 3.8% (*n* = 26) of

participants reported that their parents seriously threatened their life at least once within a typical year. Four participants reported that their life was seriously threatened by their maternal figure between six and ten times a year, and one participant reported that their paternal figure threatened their life more than 20 times in an average year.

Child sexual abuse (CSA). At least one CSA item was endorsed by 18.8% (*n* =127) of participants. Exposure to another person's sex organs was endorsed by 12.4% (*n* = 84) of participants. Twenty-four participants (3.6%) indicated that someone had threatened to have sex with them. CSA involving forcing the child to touch the abuser's sexual organs was endorsed by 43 participants (6.4%) and CSA involving the abuser touching the child's sexual organs was endorsed by 71 participants (10.5%). Twenty-three participants (3.4%) indicated that they had been forced to have oral sex and 18 participants (2.7%) indicated that they had been forced to have anal and/or vaginal intercourse. Overall, 85 (12.5%) participants reported experiencing contact CSA. The number of CSA incidents reported for each individual ranged from one incident to 200 incidents.

Examining Covariates

Demographic variables were analyzed for group differences in order to determine if any variables should be controlled for during the next steps of the analyses. Specifically, gender, age, ethnicity, country of origin, socioeconomic status, parental socioeconomic status, and sexual orientation were examined to determine if they may independently increase the risk of depressive symptoms or may be associated with either avoidant or anxious attachment. Correlations between continuous demographic variables, depression, and attachment were calculated; the influence of categorical demographic variables was analyzed using either independent samples t-tests or one-way ANOVAs. Typically, groups were collapsed into broader categories when the

sample size was too small (e.g., all individuals who reported Asian or East Indian languages as their primary language were collapsed into one group). When significant group differences were found, these variables were added as covariates into each subsequent model to control for their effects on depressive symptoms and/or attachment.

Other types of abuse, including CPA and CSA, along with the type of psychological maltreatment or neglect that was not being examined in the model, were also controlled for in order to establish the unique effects of the type of maltreatment being studied. Thus, the results are specific to the effects of CPM and CPN individually.

Gender. Significant gender differences in depressive scores were found, t (674) = 2.79, p = .005. Women reported more depressive symptoms (M = 11.1, SD = .33) than men (M = 9.3, SD = .55). No significant gender differences in attachment avoidance scores were found, t (674) = -1.41, p = .159. However, significant differences in attachment anxiety were found, such that women reported greater attachment anxiety (M = 63.74, SD = 20.54) than men (M = 59.12, SD = 19.22), t (674) = 2.62, p = .009.

Age. Age was positively correlated with depressive symptoms, r = .22, p = .047. Thus, in the sample of 18-25 year olds, older participants tended to report more depressive symptoms than younger participants. Age was not significantly correlated with either anxious attachment (r = .013, p = .735*)* or an avoidant attachment (r = -.008, p = .832).

Ethnicity/race. Ethnic and racial identification was divided into three groups due to the small sample size within some categories. Asian, Caucasian, and other ethnicities were the three designated categories; the other ethnicities group consisted of those who identified as Black (1% of the sample), First Nations (<1%), Hispanic (<2%), or mixed race (<10.5%). Ethnic and racial identification was significantly associated with depressive scores, F = 4.18, p = .016. The

Games-Howell post-hoc test was used as it is proficient in comparing group differences when the size of each group and population variances are believed to be unequal (Hilton & Armstrong, 2006). However, no significant differences were found between Asian, Caucasian, and other ethnicities in their mean depressive symptom scores. Ethnicity was not found to be significantly associated with either attachment avoidance, $F = 1.81$, $p = .164$, or attachment anxiety, $F = 2.00$, $p = .137$.

Country of origin. Country of origin was divided into two groups (born in Canada and not born in Canada) due to the large variety of countries of origin and subsequently small sample size in each. Those born outside of Canada had significantly higher scores on the TSI-2 Depressive Subscale ($M = 11.66$, $SD = 7.49$) than those born in Canada ($M = 10.27$, $SD = 7.30$), $t (674) = 2.08$, $p = .038$. They also had significantly higher scores on the avoidant attachment scale ($M = 57.27$, $SD = 18.59$) than those born in Canada ($M = 51.88$, $SD = 19.12$), $t (674) = 3.10$, $p = .002$. However, there were no significant differences between those born in or outside of Canada on the attachment anxiety scale, $t (674) = 1.94$, $p = .053$.

Socioeconomic status. As the sample consists of undergraduate university students, highest level of education achieved was very homogenous. Therefore, personal income was used to measure socioeconomic status. Personal income was collapsed into two groups, those earning under and over $10,000 a year, due to the small number of participants who reported earning the upper levels of income. There was no significant difference in depressive symptoms based on personal income, $t (594) = .04$, $p = .97$. There was also no significant difference in either attachment anxiety, $t (594) = -.43$, $p = .671$, or attachment avoidance, $t (594) = -.19$, $p = .852$, based on personal income.

Family of origin socioeconomic status. Highest level of education attained and parental annual income were examined as indicators for family of origin socioeconomic status. Parental earning was collapsed into three levels based on response frequencies: less than $50,000 annually, between $50,000 and $100,000 annually, and more than $100,000 annually. Differences in parental income were significantly related to depressive symptoms, $F = 5.45$, $p = .005$. Participants whose parent's income was less than $50,000 annually reported significantly more depressive symptoms ($M = 12.41$, $SD = 7.54$) than participants whose parents earned between $50,000 and $100,000 ($M = 10.38$, $SD = 7.24$) and participants whose parents earned more than $100,000 annually ($M = 9.69$, $SD = 7.21$). There was no significant difference in depressive symptoms for those whose parents earned between between $50,000 and $100,000 annually and those whose parents earned more than $100,000 annually.

Parental income was not related to attachment anxiety, $F = 1.58$, $p = .21$. Additionally, parental income was not significantly associated with attachment avoidance, $F = 1.34$, $p = .263$.

Parental education was also collapsed into three levels: some or completion of high school or trade school, some or completion of an undergraduate degree, and completion of a graduate degree. Highest level of parental education achieved was not associated with the participant's current depressive symptoms, $F = 1.28$, $p = .28$, attachment avoidance, $F = .175$, $p = .839$, or attachment anxiety, $F = .196$, $p = .822$.

Sexual orientation. Due to the small number of participants who reported that their sexual orientation was gay, lesbian, or bisexual ($n = 32$, <5%), sexual orientation was collapsed into two levels: heterosexual and non-heterosexual. Those who did not identify as heterosexual reported higher depressive symptoms ($M = 14.29$, $SD = 7.33$) than heterosexual participants ($M = 10.35$, $SD = 7.28$), $t\ (671) = -3.11$, $p = .002$. Those who did not identify as heterosexual did not

have significantly different levels of attachment anxiety. However, those who did not identify as heterosexual reported higher levels of attachment avoidance (M = 60.99, SD = 17.65) than participants who identified as heterosexual (M = 52.63, SD = 19.02), t (671) = -2.54, p = .011.

Summary. Several demographic variables were found to be significantly associated with depressive symptoms and attachment avoidance or attachment anxiety. Therefore, gender, age, country of origin, parental annual income, and sexual orientation will be controlled for in the models examined in this study.

Associations among Continuous Measures

Correlations among key variables (psychological maltreatment, psychological neglect, attachment, depressive symptoms, and relationship satisfaction) are presented in Table 4. Significant correlations are discussed below.

Childhood victimization. Significant positive correlations between all types of abuse were found, $p < .001$. Those who scored higher on measures of CPA were more likely to score higher on measures of CPM. Additionally, those who scored higher on measures of CPM were more likely to score higher on measures of CPN. Significant correlations among different types of childhood abuse reflect the common experience of enduring multiple types of abuse. Subsequently, other types of abuse were controlled for in the models examined in the current study.

Attachment. All types of abuse were related to higher scores on the anxious attachment scale, $p < .001$. Scoring high on the avoidant attachment scale was also significantly positively correlated with every type of abuse ($p < .05$), except childhood sexual abuse ($p = .053$). Higher scores on the TSI depressive subscale were significantly associated with higher scores on the

anxious attachment scale and the avoidant attachment scale ($p < .001$). Relationship satisfaction was negatively correlated with both anxious attachment and avoidant attachment ($p < .001$).

Depressive symptoms. Higher scores on all childhood abuse variables were associated with higher scores on the TSI-2 depressive subscale, $p < .001$. As mentioned, high levels anxious and avoidant attachment were associated with higher scores on the depressive subscale. Lastly, higher scores on the depressive subscale were associated with lower scores on the relationship satisfaction measure.

Relationship satisfaction. Higher scores on all types of childhood abuse were associated with lower scores on the relationships satisfaction, $p < .05$.

Table 4. *Pearson Correlations between Childhood Abuse, Attachment, Depressive Symptoms, and Relationship Satisfaction*

Variable	1	2	3	4	5	6	7
1. CPA							
2. CSA	.15**						
3. CPM	.50**	.19**					
4. CPN	.34**	.20**	.64**				
5. ECR Anxious	.11**	.14**	.22**	.20**			
6. ECR Avoidant	.09*	.05	.22**	.19**	.24**		
7. TSI - Depression	.23**	.21**	.33**	.38**	.50**	.33**	
8. Relationship Satisfaction	-.14*	-.13*	-.27**	-.26**	-.31**	-.55**	-.36**

Note. CPA = child physical abuse, CSA = child sexual abuse, CPM = child psychological maltreatment, CPN = child psychological neglect, ECR = Experiences in Close Relationships, * $p < .05$; ** $p<.01$

Goal 1: Child Maltreatment, Depression, and Attachment

CPM and CPN predicting depressive symptoms. I conducted a multiple linear regression for three ordered sets of predictors in order to determine whether CPM and CPN independently predict adult depressive symptoms while accounting for the effects of demographic variables and other types of concurrent abuse. Step one indicated that the demographic variables gender, age, country of origin, parental income, and sexual orientation accounted for a significant amount of the depressive symptom variability, $R^2 = .042$, F (5, 586) = 5.13, $p < .001$. The second step evaluated whether CPA, CSA, and CPN predicted depressive symptoms over and above the effects of demographic variables. The three abuse variables accounted for a significant proportion of the depressive symptom variability after controlling for the various effects of demographics, R^2 change = .133, F (8, 583) = 31.40, $p < .001$. In the third step, CPM was examined to determine if it predicted depressive symptoms while controlling for the effects of demographic variables and other types of abuse, R^2 change = .015, F (9, 582) = 10.73, $p = .001$ (see Table 5). Therefore, CPM did independently predict depressive symptoms in young adulthood.

CPN was also examined to determine its unique impact on depressive symptoms in young adulthood. As expected, CPA, CSA, and CPM predicted depressive symptoms beyond the effects of demographic covariates, R^2 change = .128, F (8, 583) = 29.93, $p < .001$. CPN predicted depressive symptoms above and beyond the effects of demographic covariates and other types of abuse, R^2 change = .020, F (9, 582) = 14.61, $p < .001$ (see Table 6). Therefore, as predicted by hypothesis one, CPM ($\beta = .172$, $t = 3.276$, $p = .001$) and CPN ($\beta = .186$, $t = 3.822$, $p < .001$) significantly predicted current depressive symptoms, even after controlling for covariate demographic variables and other types of childhood abuse.

Table 5. *Hierarchical Multiple Regression Analysis for the prediction of Depressive Symptoms by CPM*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				.034***
Gender	-1.62	0.68	-0.10*	
Age	0.25	0.18	0.06	
Parental Income	-0.96	0.41	-0.10*	
Sexual Orientation	3.09	1.32	0.10*	
Country of Origin	-1.34	0.73	-0.08	
Step 2				.175 (.133***)
Gender	-1.75	0.64	-0.11**	
Age	0.13	0.17	0.03	
Parental Income	-0.27	0.39	-0.03	
Sexual Orientation	1.65	1.24	0.05	
Country of Origin	-1.19	0.69	-0.07	
CPA	0.45	0.15	0.13**	
CSA	0.93	0.36	0.10**	
CPN	0.10	0.02	0.27***	
Step 3				.190(.015**)
Gender	-1.89	0.64	-0.11**	
Age	0.19	0.17	0.04	
Parental Income	-0.32	0.39	-0.03	
Sexual Orientation	1.46	1.23	0.05	
Country of Origin	-1.20	0.68	-0.07	
CPA	0.26	0.16	0.07	
CSA	0.85	0.35	0.09*	
CPN	0.07	0.02	0.19***	
CPM	0.06	0.02	0.17**	

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

Table 6. *Hierarchical Multiple Regression Analysis for the prediction of Depressive Symptoms by CPN*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				.034***
Gender	-1.62	0.68	-0.10*	
Age	0.25	0.18	0.06	
Parental Income	-0.96	0.41	-0.10*	
Sexual Orientation	3.09	1.32	0.10*	
Country of Origin	-1.34	0.73	-0.08	
Step 2				.158 (.128***)
Gender	-2.00	0.64	-0.12**	
Age	0.25	0.17	0.06	
Parental Income	-0.47	0.39	-0.05	
Sexual Orientation	1.79	1.24	0.06	
Country of Origin	-1.03	0.69	-0.06	
CPA	0.28	0.15	0.08	
CSA	0.95	0.36	0.11**	
CPM	0.10	0.02	0.28***	
Step 3				.178(.020***)
Gender	-1.89	0.64	-0.11**	
Age	0.19	0.17	0.04	
Parental Income	-0.32	0.39	-0.03	
Sexual Orientation	1.46	1.23	0.05	
Country of Origin	-1.20	0.68	-0.07	
CPA	0.26	0.16	0.07	
CSA	0.85	0.35	0.09*	
CPM	0.06	0.02	0.17**	
CPN	0.07	0.02	0.19***	

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

CPM and CPN predicting attachment anxiety. I conducted a multiple linear regression to determine whether CPM and CPN independently predict an anxious attachment beyond the effects of demographic covariates and other types of abuse. The first step indicated that the demographic variables associated with attachment anxiety (gender, country of origin, and sexual orientation) accounted for a significant amount of the anxious attachment variability, R^2 = .020, F (3, 657) = 4.40, p = .004. The second step evaluated whether CPA, CSA, and CPM (maltreatment) predicted anxious attachment above and beyond the effects of demographic variables. The three abuse variables accounted for a significant proportion of the anxious attachment variability after controlling for the various effects of demographics, R^2 change = .058, F (6, 654) = 13.72, p < .001. In the third step, CPN was examined to determine if it predicted anxious attachment after controlling for the effects of demographic variables and other types of abuse. As predicted, CPN was not a significant predictor for anxious attachment, R^2 change = .003, F (7, 653) = 2.04, p = .153 (see Table 7).

CPM was also examined to determine if it was a unique predictor for anxious attachment. CPA, CSA, and CPN predicted anxious attachment beyond the effects of demographic covariates, R^2 change = .046, F (6, 654) = 10.68, p < .001. CPM predicted anxious attachment above and beyond the effects of demographic covariates and other types of abuse, R^2 change = .015, F (7, 653) = 10.75, p = .001 (see Table 8). Therefore, as predicted by hypothesis two and three, CPM (β = .175, t = 3.28, p = .001) but not CPN (β = .071, t = 1.43, p = .153) significantly predict anxious attachment during adulthood, after controlling for covariate demographic variables and other types of childhood abuse.

Table 7. *Hierarchical Multiple Regression Analysis for the prediction of Anxious Attachment by CPN*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				0.020**
Gender	-5.09	1.80	-0.11**	
Sexual Orientation	4.06	3.50	0.05	
Country of Origin	-4.00	1.88	-0.08*	
Step 2				0.078 (.058***)
Gender	-5.32	1.76	-0.11**	
Sexual Orientation	0.14	3.47	-0.00	
Country of Origin	-3.82	1.84	-0.08*	
CPA	-0.13	0.422	-0.01	
CSA	2.25	0.96	0.09*	
CPM	0.20	0.04	0.22***	
Step 3				0.081 (.003)
Gender	-5.13	1.76	-0.11**	
Sexual Orientation	-0.35	3.48	-0.00	
Country of Origin	-3.87	1.84	-0.08*	
CPA	-0.16	0.422	-0.02	
CSA	2.14	0.96	0.09*	
CPM	0.16	0.05	0.18**	
CPN	0.07	0.05	0.07	

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

Table 8. *Hierarchical Multiple Regression Analysis for the prediction of Anxious Attachment by CPM*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				.020**
Gender	-5.09	1.80	-0.11**	
Sexual Orientation	4.06	3.50	0.05	
Country of Origin	-4.00	1.88	-0.08*	
Step 2				.065 (.046***)
Gender	-4.69	1.76	-0.10**	
Sexual Orientation	0.14	3.51	-0.00	
Country of Origin	-3.66	1.86	-0.08*	
CPA	0.37	0.39	0.04	
CSA	2.31	0.97	0.09*	
CPN	0.15	0.04	0.16***	
Step 3				.081 (.015**)
Gender	-5.13	1.76	-0.11**	
Sexual Orientation	-0.35	3.48	-0.00	
Country of Origin	-3.87	1.84	-0.08*	
CPA	-0.16	0.422	-0.02	
CSA	2.14	0.96	0.09*	
CPN	0.07	0.05	0.07	
CPM	0.16	0.05	0.18**	

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

CPM and CPN predicting avoidant attachment. I also conducted a multiple linear regression to determine whether CPM and CPN independently predict avoidant attachment beyond the effects of demographic covariates and other types of abuse. The results of the analysis indicated that the demographic variables associated with attachment (gender, country of origin, and sexual orientation) accounted for a significant amount of the avoidant attachment variability, $R^2 = .026$, $F (3, 657) = 5.91$, $p = .001$. The second step evaluated whether CPA, CSA, and CPM predicted avoidant attachment above and beyond the effects of demographic variables. The three abuse variables accounted for a significant proportion of the avoidant attachment variability after controlling for the various effects of demographics, R^2 change = .042, $F (6, 654) = 9.93$, $p < .001$. In the third step, CPN was examined to determine if it predicted avoidant attachment after controlling for the effects of demographic variables and other types of abuse. As predicted, CPN was a significant predictor for avoidant attachment, R^2 change = .006, $F (7, 653) = 3.97$, $p = .047$ (see Table 9).

CPM was examined to determine if it was a unique predictor for avoidant attachment. CPA, CSA, and CPN predicted avoidant attachment beyond the effects of demographic covariates, R^2 change = .034, $F (6, 654) = 7.85$, $p < .001$. Contrary to hypothesis two, CPM predicted avoidant attachment above and beyond the effects of demographic covariates and other types of abuse, R^2 change = .014, $F (7, 653) = 10.01$, $p = .002$ (see Table 10). Therefore, CPM ($\beta = .169$, $t = 3.16$, $p = .002$) and CPN ($\beta = .099$, $t = 1.99$, $p = .047$) both significantly predict avoidant attachment during adulthood, after controlling for covariate demographic variables and other types of childhood abuse.

Table 9. *Hierarchical Multiple Regression Analysis for the prediction of Avoidant Attachment by CPN*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				.026**
Gender	1.77	1.68	0.04	
Sexual Orientation	8.51	3.28	0.10*	
Country of Origin	-5.29	1.75	-0.12**	
Step 2				.069 (.042***)
Gender	1.35	1.67	0.03	
Sexual Orientation	5.83	3.27	0.07	
Country of Origin	-5.41	1.74	-0.12**	
CPA	-0.50	0.40	-0.06	
CSA	0.30	0.90	0.01	
CPM	0.20	0.04	0.23***	
Step 3				.074 (.006*)
Gender	1.61	1.67	0.04	
Sexual Orientation	5.19	3.28	0.06	
Country of Origin	-5.48	1.74	-0.12**	
CPA	-0.54	0.40	-0.06	
CSA	0.15	0.90	0.01	
CPM	0.15	0.05	0.17**	
CPN	0.09	0.04	0.10*	

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

Table 10. *Hierarchical Multiple Regression Analysis for the prediction of Avoidant Attachment by CPM*

Variable	*B*	*SE B*	β	$R^2(\Delta R^2)$
Step 1				.026**
Gender	1.77	1.68	0.04	
Sexual Orientation	8.51	3.28	0.10*	
Country of Origin	-5.29	1.75	-0.12**	
Step 2				.060 (.034***)
Gender	2.00	1.67	0.05	
Sexual Orientation	5.64	3.30	0.07	
Country of Origin	-5.29	1.75	-0.12**	
CPA	-0.06	0.37	-0.01	
CSA	0.31	0.91	0.01	
CPN	0.16	0.04	0.19***	
Step 3				.074 (.014**)
Gender	1.61	1.67	0.04	
Sexual Orientation	5.19	3.28	0.06	
Country of Origin	-5.48	1.74	-0.12**	
CPA	-0.54	0.40	-0.06	
CSA	0.15	0.90	0.01	
CPN	0.09	0.04	0.10*	
CPM	0.15	0.05	0.17**	

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

Goal 2: Indirect Effects of Child Maltreatment on Depressive Symptoms

To determine whether attachment mediates the relationship between childhood psychological maltreatment or neglect and later depressive symptoms, I conducted several mediational analyses according to the procedures outlined by Hayes (2013) using the SPSS 24 Macro: "Process".

Two simple mediation models were initially planned to determine the indirect effects of CPM and CPN on depression symptoms through attachment, as it was expected that child psychological maltreatment would only predict anxious attachment, and not avoidant attachment, and child psychological neglect would only predict avoidant attachment, and not anxious attachment. However, CPM was a predictor for both anxious and avoidant attachment. Therefore, a multiple parallel mediation model, which examines two mediators simultaneously, was used to determine whether anxious and/or avoidant attachment significantly mediate the relationship between CPM and depressive symptoms. As CPN was only a predictor for avoidant attachment, a simple mediation model was used to determine whether avoidant attachment is a mediator for the relationship between CPN and depressive symptoms.

Mediators of the relationship between CPN and depressive symptoms. A simple mediation analysis conducted using ordinary least squares path analysis demonstrated that, while controlling for demographic covariates and other types of childhood abuse, CPN influenced depressive symptoms in adulthood through its impact on avoidant attachment. As presented in Figure 6 and Table 5, participants who experienced higher levels of CPN reported greater attachment avoidance than those who experienced lower levels of CPN ($a = .105$, $p < .05$). Participants who were higher in their reported avoidant attachment expressed higher levels of current depressive symptoms ($b = .103$, $p < .001$). A bias-corrected bootstrap confidence interval

for the indirect effect (*ab* = .011) based on 5,000 bootstrap samples was entirely above zero (.001 to .023), thus indicating the indirect effect is in fact significant (Hayes, 2013). Thus, CPN may influence depressive symptoms through its impact on avoidant attachment. However, as the association between CPN and depressive symptoms remains significant even when attachment avoidance is included in the model (*c*' = .056, *p* = <.01), it is likely that other variables are influencing the link between CPN and depressive symptoms in young adulthood.

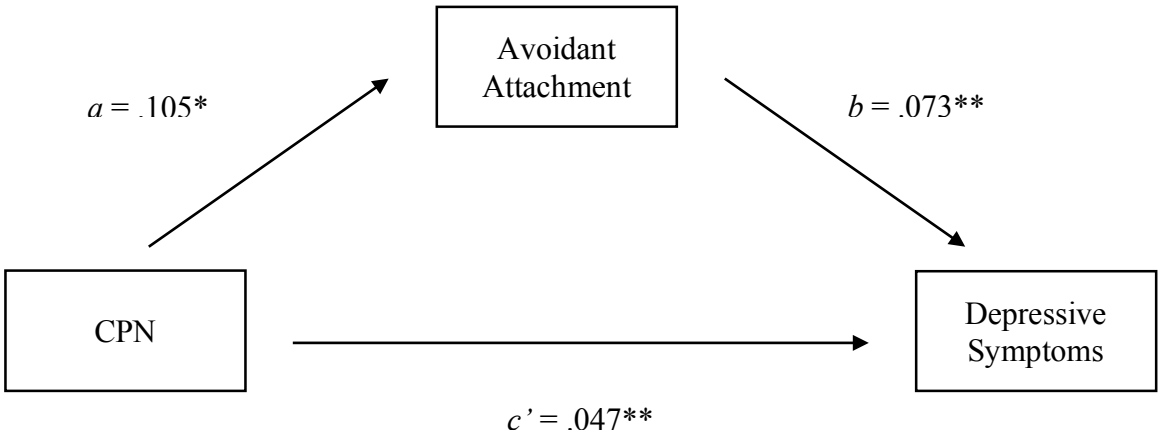

Figure 6. Simple mediation model for child psychological neglect, avoidant attachment, and depressive symptoms.

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

Table 11. *Coefficients for Child Psychological Neglect, Avoidance, and Depressive Symptoms Model*

		Avoidance				Depressive Symptoms		
		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (CPN)	***a***	0.105	0.048	0.031	***c'***	0.047	0.015	0.002
M (Avoidance)		-	-	-	***b***	0.073	0.013	<.001
Constant	i_1	52.47	10.17	<.001	i_2	-8.07	3.32	0.015
		$R^2 = .081$				$R^2 = .081$		
		F (9, 582) = 5.73, p <.001				F (11, 580) = 33.09, p <.001		

Mediators of the relationship between CPM and depressive symptoms. A parallel multiple mediation revealed that, while controlling for demographic covariates and other types of childhood abuse, child psychological maltreatment influenced depressive symptoms in adulthood through its effect on avoidant attachment and anxious attachment. As presented in Figure 7 and Table 6, participants who experienced higher levels of CPM reported greater anxious attachment than those who experienced lower levels of CPM (a_1 = .181, p < .001). Additionally, participants who experienced greater levels of CPM had higher scores on the avoidant attachment scale than those who experienced less CPM (a_2 = .139, p < .01). Participants who were higher in their reported anxious attachment expressed higher levels of current depressive symptoms (b_1 = .140, p <.001). Similarly, participants who were higher in their reported avoidant attachment expressed higher levels of current depressive symptoms (b_2 = .073, p <.001). A bias-corrected bootstrap confidence interval for the indirect effect of CPM on depression through anxious attachment (ab_1 = .011) based on 5,000 bootstrap samples was entirely above zero (.010 to .042), thus indicating the indirect effects are significant. Additionally, a bias-corrected bootstrap confidence interval for the indirect effect of CPM on depression through avoidant attachment (ab_2 = .011) based on 5,000 bootstrap samples was entirely above zero (.004 to .019), thus indicating the indirect effects are significant. Therefore, participants who experienced higher levels of CPM report greater depressive symptoms in part due to the influence of CPM on anxious and avoidant attachment, which in turn impacts depressive symptoms. There was no evidence that CPM directly influenced depressive symptoms independent of CPM's effect on anxious and avoidant attachment, as the direct association between CPM and depressive symptoms is no longer significant when attachment is also included in the model (c' = .023, p = .147).

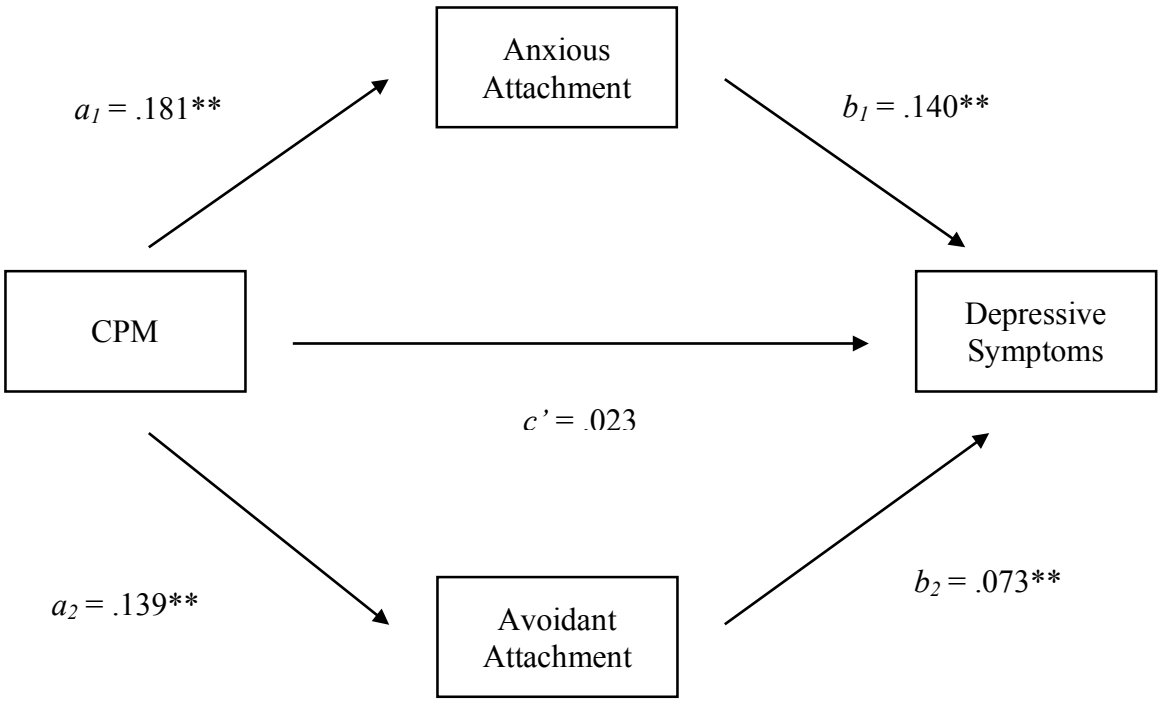

Figure 7. Parallel mediation model for child psychological maltreatment, anxious attachment, avoidant attachment, and depressive symptoms.

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

Table 12. *Model Coefficients for the Mediation of CPM and Depressive Symptoms by Anxious and Avoidant Attachment*

		M_1 (Anxious)				*M_2 (Avoidant)*				*Y (Depressive Symptoms)*		
		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (CPM)	a_1	0.181	0.052	<.001	a_2	0.139	0.049	0.005	c'	0.023	0.016	0.147
M_1 (Anxious Attachment)		-	-	-		-	-	-	b_1	0.140	0.013	<.001
M_2 (Avoidant Attachment)		-	-	-		-	-	-	b_2	0.073	0.013	<.001
Constant	i_{M1}	56.54	10.69	<.001	i_{M2}	52.47	10.17	<.001	i_Y	-8.07	3.32	.015
		$R^2 = .084$ F (9, 582) = 5.96, p <.001				$R^2 = .081$ F (9, 582) = 5.73, p <.001				$R^2 = .386$ F (11, 580) = 33.09, p <.001		

Goal 3: Relationship Status as a Moderator of the Mediation Model

Relationship status was examined as a moderator of the association between CPM and CPN on depressive symptoms through anxious and avoidant attachment. I conducted a moderated mediation in accordance to the procedure outlined by Hayes (2013), using a bootstrapping approach in the SPSS Macro: "Process." A moderated mediation examines whether the conditional effects of a predictor on an outcome variable through a mediation variable differs based on the levels of a moderator (Hayes, 2013). Specifically, I examined whether the effect of CPM and/or CPN on anxious and/or avoidant attachment is dependent on relationship status; this would subsequently impact the overall mediational model such that the impact of childhood maltreatment on depression through attachment may depend on whether or not the person is in a relationship.

The results of the moderated mediation suggest that current relationship status *does not* moderate the effect of CPM on avoidant attachment (t (571) = -.391, p >.05) (see *Figure 2)*. Thus, the overall indirect effects of CPM on depressive symptoms through avoidant attachment are not conditional on relationship status, as demonstrated by the moderated mediation index of -.002 (LLCI = -.013 ULCI = .0080). Similarly, current relationship status *does not* moderate the effect of CPM on anxious attachment (t (571) = .956, p >.05) (see *Figure 3)*. Although the indirect effects of CPM on depressive symptoms through anxious attachment is larger for those not currently in a relationship (ab = .027) in comparison to the effect for those currently in a romantic relationship (ab = .017), the conditional indirect effects are not significant as the index of moderated mediation is .010 (LLCI = -.013 ULCI = .0314).

Current involvement in a romantic relationship also *does not* moderate the effect of CPN on avoidant attachment (t (571) = 1.50, p >.05). Again, although the indirect effect of CPN on

depressive symptoms through avoidant attachment is larger for those who are not in a romantic relationship (*ab* = .019) compared to those currently in a relationship (*ab* = .008), the conditional indirect effects are not significant as the index of moderated mediation is .011 (LLCI = -.005 ULCI = .029).

Goal 3: Relationship Satisfaction as a Moderator for the Mediation Model

Although simply being in a relationship was not a buffer for the effects of childhood maltreatment on later depressive symptoms as a function of attachment, an additional moderated mediation was conducted to determine whether, among those currently in relationships, one's satisfaction within the relationship influences the effect of CPM and/or CPN on anxious and/or avoidant attachment.

The two significant mediation models from goal two were examined: CPM's effect on depressive symptoms through both avoidant and anxious attachment, and CPN's effect on depressive symptoms through avoidant attachment. Relationship satisfaction did not moderate the relationship between CPM and anxious attachment, as demonstrated by the moderated mediation index of .0008 (LLCI = -.004 ULCI = .005). Therefore, the effect of CPM on depressive symptoms by way of anxious attachment did not vary depending on whether the individual felt satisfied or dissatisfied in their romantic relationship. Similarly, the effect of CPN on depressive symptoms through avoidant attachment was not conditional on relationship satisfaction, as demonstrated by the index of moderated mediation of .002 (LLCI = .-0003 ULCI = .0056). However, the effect of CPM on depressive symptoms through attachment avoidance was dependent on relationship satisfaction; the interaction coefficient was significant at .028 (t (284) = 2.32, p = .021, LLCI = .004, ULCI = .052; see Table 7). Contrary to expectations, the indirect effects were actually strengthened for individuals currently in a very satisfying

relationship. As Hayes (2013) suggests, the conditional effects at five different percentiles of the moderator (10th, 25th, 50th, 75th and 90th percentiles) can be examined to determine at what values the moderator (relationship satisfaction) influences the mediator (attachment). The effect of CPM on depressive symptoms through avoidant attachment was heightened for participants who had scored in the 75th percentile (t (284) = 2.13, p = .034) and 90th percentile (t (284) = 2.50, p = .013) on the measure of relationship satisfaction. Therefore, when participants scored very high on relationship satisfaction, they were more likely to score high on the avoidant attachment scale, which is in turn associated with their depressive symptoms.

Table 13. *Coefficients for Conditional Indirect Effects of CPM, Avoidance, Depressive Symptoms and Relationship Satisfaction*

		Avoidance				Depressive Symptoms		
		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (CPM)	a_1	-.38	.202	.063	c'	.031	.022	.150
M (Avoidance)		-	-	-	b	.072	.020	<.001
W (Relationship Satisfaction)	a_2	-3.85	.451	<.001		-	-	-
X x W	a_3	.028	.012	.021		-	-	-
Constant	i_1	87.95	13.65	<.001	i_2	-8.07	3.32	.015
		R^2 = .333 F (11, 284) = 12.91, p <.001				R^2 = .392 F (11, 284) = 16.64, p <.001		

Discussion

This investigation explored how an individual's attachment strategies, relationship status, and relationship satisfaction influence the well-established association between CPM and CPN and depressive symptoms in emerging adulthood. The current study found that both CPM and CPN significantly predicted depressive symptoms in young adults. Additionally, as expected, CPM predicted attachment anxiety and CPN predicted attachment avoidance later in life. However, contrary to expectations, CPM also predicted avoidant attachment. Both anxious and avoidant attachment were predictive of depressive symptoms. Furthermore, avoidant attachment did explain a significant amount of the relationship between CPN and depressive symptoms. Both avoidant and anxious attachment were significant mediators of the relationship between CPM and depressive symptoms. Whether a person was currently in a romantic relationship or not *did not* impact the association between maltreatment and attachment. However, for those who experienced CPM, how satisfied the individual was in their current romantic relationship influenced the association between CPM and avoidant attachment. Specifically, when an individual was currently involved in a very satisfying romantic relationship, the association between CPM and avoidant attachment was heightened, and therefore the overall connection between CPM and depressive symptoms as a function of avoidance was strengthened.

Child Maltreatment and Depressive Symptoms

As expected, CPM and CPN predicted depressive symptoms in young adults. This is consistent with existing literature which has found psychological maltreatment and neglect to predict depression, independent of other types of abuse (Chapman et al., 2004; Liu et al., 2009; Spertus et al., 2003). Infurna and colleagues (2016) conducted a meta-analysis to examine how

various types of child maltreatment impact depressive symptoms later in life. They found age-related differences for the severity of depressive symptoms depending on whether the individual had experienced psychological maltreatment (characterized by shame and fear), or antipathy (characterized by emotionlessness and aggression). Psychological maltreatment was more strongly associated with depression for adolescents than adults. On the other hand, antipathy was more strongly associated with depression for adults rather than adolescents. The studies in the meta-analysis categorized adolescents as young teenagers and those in their early 20s. The results of the current study continue to augment this emerging line of research suggesting that CPM may be connected to later depressive symptoms, especially for emerging adults. Future longitudinal research is pertinent to elucidate whether a specific vulnerability period exists, and whether protective factors for maltreatment-related depressive symptoms differ based on age and/or the type of childhood maltreatment experienced.

Previous research often categorizes neglect as a broad construct subsuming many different types of neglect, such as basic neglect and physical neglect (Infurna et al., 2016). For example, in Infurna and colleagues' study, scoring high on the measure of neglect could involve not being taken to the doctor when in need, not receiving food or shelter due to poverty, a lack of affection or care, and/or being forbidden to attend school or receive adequate alternate education. However, it is probable that these distinctive types of neglect have unique impacts on the psychological, social, cognitive, and physical development of children (Johnson, Smailes, Cohen, Brown, & Bernstein, 2000). It is plausible to suspect that feeling unloved as a child as opposed to feeling loved and supported yet unable to access food or medical care due to poverty, might impact development and manifest in adulthood in distinctly different ways. Some studies have examined CPN as a discrete construct related to clinical symptoms. Spertus and colleagues

(2003) found that emotional neglect was linked to increased clinical symptoms in adulthood, including depression, anxiety, posttraumatic stress, and physical health. The results of the current study contribute to the emerging understanding of the unique role of CPN, which was found to be linked to depressive symptoms in young adulthood.

The results of the current investigation certainly add to the growing body of literature linking CPM and CPN to depressive symptoms, while controlling for the effects of other types of abuse. However, the existing literature typically investigates the link between childhood maltreatment and later emotional functioning by using diagnostic criteria to classify individuals as either currently experiencing, or ever having experienced, major depressive disorder (e.g., Infurna et al., 2016; Spertus et al., 2003). The current study does not view an experience of depressive symptoms as categorical: i.e., as either, 'major depression' or 'no major depression'. Implementing continuous systems to measure clinical symptoms may increase the ecological validity of research (Markon, Chmielewski, & Miller, 2011). Specifically, although individuals may not meet the diagnostic criteria for MDD, they may be experiencing depressive symptoms and subsequent distress that is impacting their functioning or overall wellness. Thus, the current study also extends upon the current literature by measuring depressive symptoms continuously. The continuous measure of depressive symptoms ideally attempts to capture the complicated and varied set of symptoms people may experience after childhood maltreatment without the rigidity associated with imposing a firm cut off score.

Child Maltreatment and Attachment

Childhood psychological maltreatment and anxious and avoidant attachment. Based on previous studies, it was expected that CPM would predict anxious attachment, but not avoidant attachment. Muller and colleagues (2012) found that CPM was significantly correlated

with attachment anxiety in the current relationships of emerging adults, but not with attachment avoidance. It was initially suspected that the inherent nature of acts of commission intended to degrade the child and convey a global lack of worth would uniquely contribute to anxious attachment (Hildyard & Wolfe, 2002). Based on previous research, this chronic and tumultuous relationship was predicted to cause individuals to be highly dependent on their relationships with others, yet simultaneously, require an excessive amount of reassurance and be highly sensitive to criticism (Muller et al., 2012). However, in the current study, CPM predicted both anxious and avoidant attachment. Perhaps which attachment strategy is developed or utilized depends on the individual's personality, previous reinforcement of certain behaviours, or other life experiences. For example, if a child's dependency and reassurance-seeking behaviours elicit signs of affection from their psychologically maltreating caregiver, perhaps they will continue to employ anxious attachment strategies. On the other hand, if they elicit rejection, perhaps the child will withdraw altogether. Similarly, perhaps if a child is praised for their independence by a caregiver who is psychologically abusive, the child may continue to employ avoidant attachment strategies. The strategies children learn and employ as young children may permeate into their adult relationships with significant others, unless significant events or changes take place to shift attachment style (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). In summary, contrary to expectations, the current study suggests that an individual who experienced CPM may demonstrate anxious and/or avoidant attachment in adulthood; the form of attachment shown may depend on a myriad of other factors that were not addressed in this study.

Childhood psychological neglect and avoidant attachment. As expected, CPN predicted avoidant attachment, but not anxious attachment. Given the nature of CPN, which involves a consistent failure to meet basic needs and an absence of displays of fondness or love,

it was predicted that children who experienced CPN would withdraw and learn to meet their own needs at a very young age (Hildyard & Wolfe, 2002). Rholes, Simpson, and Friedman (2006) found that parents who displayed an avoidant attachment style in their own romantic relationships passed that style on to their children. According to social learning theory, children could subsequently develop avoidant attachment strategies in adulthood due to modeling, which suggests that children learn behaviours, thoughts, or attitudes through observation of important others (Bandura, 1962). For example, one study examined fear and avoidance responses in toddlers following exposure to stimuli they had never seen, a rubber snake (Gerull & Rapee, 2002). When the children saw their mothers have negative reactions to the rubber snake, the toddlers showed more fear and avoidance of the object. Although these are overt reactions to a very new situation, it is possible that through modelling, children may be picking up on even the most nuanced and subtle expressions of attachment style. However, research is needed to develop and confirm this theory. Furthermore, it is possible that parental avoidant attachment is correlated with neglectful behaviour toward their own child. A parent who is fearful of closeness and dependence in their romantic relationship may also seek distance from their child. Thus, the child learning from their parents avoidant attachment strategy may also experience psychological neglect, which, as the current study suggests, may lead to avoidant attachment in young adulthood.

Several studies have linked childhood neglect to insecure attachment, but few have specified what type of insecure attachment strategies these individuals employ (Lowell, Renk, & Adgate, 2014; Shiakou, 2012). One study found that childhood neglect was associated with an anxious/ambivalent attachment style in children between age 6 and 13, who were currently experiencing neglect by a parent (Finzi, Cohen, Sapir, & Weizman, 2000). In this study,

attachment style was measured by the Attachment Style Classification Questionnaire, which utilizes a categorical model of attachment. Specifically, an anxious/ambivalent attachment style is similar to the anxious dimension in the current study. It involves heightened anxiety and a strong desire for closeness and stability. In Finzi and colleagues' study, neglect was a broad term which included psychological neglect, physical neglect, educational neglect, and medical neglect. The current results contradict these findings, as neglect was found to be associated with avoidant attachment and not anxious attachment. Perhaps there is something unique about psychological neglect that encourages an avoidant but not anxious attachment. It is possible that the more physical types of neglect, such as not receiving clothing, food, medical attention and shelter elicit more anxiety in these children. On the other hand, perhaps not receiving love and support provokes anxiety uniquely. It is also important to note that Finzi and colleagues' study looked at attachment style in childhood, not later in life. Therefore, it is also possible that neglect could be associated with anxious attachment in childhood and avoidant attachment in young adulthood. One recent study found that childhood neglect was associated with both an anxious and avoidant attachment in adulthood (Widom et al., 2017). However, only anxious attachment acted as a mediator between neglect and later depressive symptoms. The current study confirms the link between neglect and avoidant attachment, but not between neglect and anxious attachment. Additionally, in the current study, avoidant attachment was found to be a mediator for the relationship between neglect and later depressive symptoms. However, in Widom and colleagues' sample, participants were older adults (on average, age 41) and had differing demographic characteristics with regard to ethnicity and country of origin. Thus, again, perhaps there are temporal differences across the lifespan with regard to which attachment

strategies are most typically employed at what age, and how they impact depressive symptomology.

Insecure Attachment and Depressive Symptoms

As expected, both an anxious and avoidant attachment predict depressive symptoms. This adds to the existing literature linking insecure attachment to psychological stress and depression. One study conducted by Hankin, Kassel, and Abela (2005) indicated that insecure attachment, which involved high levels of both anxious and avoidant attachment strategies, predicted an increase in depressive symptoms at 2 time points: 8-months and 2 years later. A different study by Hankin (2006) also found that insecure attachment, including both avoidant and anxious attachment, was predictive of depressive symptoms above and beyond the effects of childhood emotional, physical, and sexual abuse. In a study by Fortuna and Roisman (2008), attachment avoidance and anxiety were robustly associated with psychopathology, which included both internalizing and externalizing problems. Both the Adult Attachment Interview and a self-report measure of attachment were used to examine the individual's attachment to their primary caregiver during childhood. A measure of current stress was also given to determine whether vulnerability to psychopathology differed based on whether the person was currently experiencing high or low levels of stress. The results indicated that when adults self-reported their attachment style, insecure attachment was consistently associated with psychopathology regardless of stress level. However, when the Attachment Interview was given, insecure attachment was only associated with psychopathology when the individual's current stress level was high. This suggests that, when adults report their own attachment, insecure attachment is a risk factor for psychopathology regardless of current life stress. Yet, when trained clinicians designate individuals as securely or insecurely attached, the diathesis-stress model is most fitting

such that insecure attachment is a vulnerability that, when paired with high levels of stress, may lead to psychopathology. Perhaps individuals who are currently experiencing psychopathology and subsequent distress answer questions about their attachment differently than those who are currently not experiencing psychopathology. Thus, important differences between self-report and interview methods of measuring attachment may exist. In the current study, attachment strategies were measured using a self-report questionnaire. Thus, it is important to note that if participants were not currently experiencing psychopathology or psychological distress, they may have reported higher levels of insecure attachment compared to how clinicians giving the AAI might have categorized them.

Unlike in Hankin and colleagues (2005; 2006), the current study examined anxious and avoidant attachment as separate dimensions. Additionally, unlike in Fortuna and Roisman's 2008 study, anxious and avoidant attachment were measured with regard to how the individual typically acts in important current relationships, not how they felt about their primary caregiver during childhood. Although attachment styles during childhood are predictive of adult attachment, adult attachment contributes uniquely to current psychological and social functioning. For example, adult attachment will affect how an individual interacts with their partner and significant others, as well as how they generally view the world around them (Johnson, 2002). Therefore, the current study specifically contributes to the literature surrounding how attachment in intimate adult relationships is predictive of depressive symptoms.

There are several plausible mechanisms for how insecure attachment could lead to depressive symptoms. For example, avoidant attachment may reduce the amount or quality of social support an individual receives. Specifically, if individuals are uncomfortable with closeness and dependence, they may not seek out psychosocial support and friendships, or may

engage in these important relationships differently than individuals who are low in avoidance (Hildyard & Wolfe, 2002). Anxious attachment, and the reassuring and highly dependent behaviour typical of this style, may also reduce the amount of, or quality of, social support the individual is receiving (Sirois, Millings, & Hirsch, 2016). A lack of social support and isolation are associated with worsening depressive symptoms (Bruce, 2002; Friedman, Son, Thomas, Chapa, & Lee, 2014; Santini, Koyanagi, Tyrovolas, Mason, & Haro, 2015). One study found that an anxious attachment style was associated with excessive reassurance-seeking behaviour, and an avoidant attachment style was associated with negative feedback-seeking behaviour (Evraire, Ludmer, & Dozoi, 2014). Although excessive reassurance-seeking initially elicits support and encouragement from significant others, it actually tends to alienate others as time passes (Hames et al., 2013). Additionally, both excessive reassurance-seeking and negative feedback-seeking have been independently linked to an exacerbation of depressive symptoms and their impact on intimate relationships (Abela et al., 2005; Hames et al., 2013). Although individuals receive reassurance and support at first, over time significant others start to withdraw and recoil from the duty of unremittingly assuring others. Subsequently, individuals who experienced child maltreatment and currently show depressive symptoms then confirm their preconceived distortions that they are not likeable or loveable (Browne & Winkelman, 2007). Thus, these behaviours may actually reduce social connectedness and support, thereby worsening depressive symptoms. It is also possible that for some people, excessive reassurance-seeking and negative feedback-seeking actually stem from insecure attachment, not depression, yet function as risk factors for worsening depressive symptoms.

Anxious or avoidant attachment may also be associated with countless other variables that independently worsen depressive symptoms. For example, one study found that adult

attachment influenced adult psychological functioning through its impact on cognitive distortions (Browne & Winkelman, 2007). Insecurely attached individuals with a distorted self-concept were likely to experience psychological distress due to their beliefs that negative events were their fault and the world was largely out of their control. Similarly, another study found that an anxious and avoidant attachment style predicting many different types of psychopathology (including depression and anxiety) could be explained by cognitions surrounding rejection and disconnection from others (Bosmans, Braet, & Van Vlierberghe, 2010). Specifically, anxious and avoidant attachment predicted cognitions that essentially embodied the sentiment of being unlovable, likely to be abandoned, uncared for, and alone even amongst familiar people. It was these cognitions that accounted for the link between insecure attachment and later psychological symptoms. Lastly, adult attachment could impact psychological functioning through harmful coping strategies such as substance use (Kassel, Wardle, & Roberts, 2007). For example, an individual with an insecure attachment style may have difficulty seeking out social support to cope with psychological distress and thus turn to substances. Although escaping through substance use may temporarily alleviate symptoms, it may also exacerbate depression over time (McGrath, Nunes, & Quitkin, 2015).

Indirect Effect of Maltreatment on Depressive Symptoms

Although the link between CPM and CPN and later depressive symptoms is well established in the literature, the mechanisms that may function between experiences of childhood maltreatment and later depressive symptoms have yet to be fully established. The results suggest that the relationship between CPN and later depressive symptoms is explained partially by attachment avoidance. This is a unique finding, as attachment as an explanatory variable for the

relationship between CPN specifically, and depressive symptoms, has yet to be presented in the literature.

The current results also suggest that the relationship between CPM and later depressive symptoms is explained by both attachment avoidance and anxiety. As the direct effects became insignificant when these two mediators were included in the model, this model is classically consistent with a complete mediational model. However, as Hayes (2013) suggests, this is an outdated interpretation and, including in this instance, researchers should continue to try to understand additional mechanisms for how childhood psychological maltreatment leads to depression in adulthood. Therefore, although the indirect effects of anxious and avoidant attachment play a significant role in the development of depressive symptoms after CPM, there are likely other variables that may also contribute to this association.

One similar study examining potential mediators between CPM and later depressive symptoms was conducted by Hankin in 2005. The study considered three different proximal factors (insecure attachment style, negative cognitive styles, and negative life events) that could explain the distal relationship between childhood maltreatment and adult depressive symptoms. CPM was found to be a robust predictor for depressive symptoms. Insecure attachment style, negative cognitive styles and negative life events were proximal variables that accounted for a significant amount of the association between childhood maltreatment and depressive symptoms in young adulthood. In Hankin's study, insecure attachment style included both anxious and avoidant strategies. The current results support Hankin's findings, as both anxious and avoidant attachment were found to mediate the relationship between CPM and depressive symptoms. However, it is clear that, as Hankin (2005) found, there are likely other variables that may impact this association, such as other negative life events and cognitions.

Childhood Maltreatment and Intimate Relationships

In order to determine whether being in a relationship buffers the effects of child maltreatment on depressive symptoms by way of insecure attachment, relationship status was included in the mediation model. Relationship status was examined as a potential moderator of the relationship between CPM and avoidant and anxious attachment. Additionally, it was included in the model as a moderator between CPN and avoidant attachment. For some individuals, attachment style evolves over time, and can shift from insecure to secure when individuals are in healthy relationships and learn 'secure scripts' which provide recurrent and consistent positive experiences with caring and receptive attachment figures (Crowell, Treboux, & Waters, 2002). This is easily conceivable; perhaps individuals with an avoidant attachment style due to their experience of CPM and/or CPN shift to more secure attachment as they overcome their fear of dependence and closeness in an intimate relationship. Similarly, perhaps individuals would overcome their attachment anxiety as they learn their love is reciprocated and their partner consistently responds to them in their current intimate relationship. Therefore, it was predicted that the link between child maltreatment and insecure attachment styles would diminish if the individual was currently in a romantic relationship. However, relationship status was not found to be a significant moderator in the current model. Perhaps, the shift from insecure to secure attachment happens in older adults or is dependent on other factors. In Crowell and colleague's (2002) examination of the 64% of young adults classified as insecurely attached prior to marriage, that were classified as securely attached after marriage, certain factors associated with the shift to stability emerged. Specifically, young adults who had greater psychological and physical distance from their child attachment figures, typically their parents, were more likely to shift to securely attached after marriage. For example, the young adults who

lived away from home or with their partners before marriage were more likely to shift to securely attached after marriage. Perhaps, in the current sample, these young adults (mean age of 20.7) have not yet had the opportunity to gain distance and independence from their parents. Additionally, in Crowell et al.'s study, attachment style was measured before and after marriage. Therefore, perhaps the shift to secure occurs primarily in partners who are very seriously committed to each other. Lastly, perhaps the quality of these romantic relationships or the amount of satisfaction individuals experience in their relationships impact whether or not intimate relationships act as a buffer for insecure attachment.

Accordingly, relationship satisfaction was added to the preexisting mediational model in order to determine whether, for those currently in a relationship, current relationship satisfaction moderates the association between maltreatment and attachment. Relationship satisfaction did not moderate the relationship between CPM and anxious attachment, or between CPN and avoidant attachment. However, relationship satisfaction did moderate the relationship between CPM and avoidant attachment. Contrary to expectations, when current relationship satisfaction was very high, the connection between CPM and depressive symptoms due to avoidant attachment was actually intensified. Thus, individuals who reported being very satisfied with their partner may actually have been experiencing heightened avoidant attachment, which in turn, exacerbated depressive symptoms. Relationship satisfaction related to how often the individual felt things were going well in their relationship, whether they confide in their partner or not, how often they have considered ending the relationship, and their general happiness in the relationship. Therefore, for individuals possibly in their first serious relationship who typically use avoidant attachment strategies, this level of dependence and overall satisfaction may have actually be very distressing. It will be important to determine whether the distress experienced in

satisfying relationships by avoidantly attached individuals with a history of CPM is a short term phenomenon or will endure as these young adults age and settle into long term relationships.

Limitations and Future Directions

There were several limitations that may impact the interpretation of these results. Firstly, the sample consisted entirely of undergraduate students at the University of Victoria. The demographic characteristics of this sample may affect the generalizability of the results beyond this particular university sample. For example, the sample consisted primarily of Caucasian individuals. It is known that ethnicity may impact how an individual experiences and reports depressive symptoms (Bromberger, Harlow, Avis, Kravitz, & Cordal, 2004; Kalibatseva, Leong, & Ham, 2014). Additionally, attachment strategies can differ based on culture and age (Agishtein & Brumbaugh, 2013). For example, Agishtein and Brumbaugh (2013) examined participants in over 50 countries and found that attachment anxiety and avoidance differed based on ethnicity, acculturation (the degree the individual adopts customs of a different culture), country of origin, and whether or not the country or region was collectivist. Chopik and Edelstein (2014) found that attachment anxiety was highest among younger adults and decreased in middle-aged and older adults. Therefore, the findings of the current study may not be entirely applicable to individuals who are not Caucasian, or to middle-aged and older adults. The current sample of young adults also came from middle-class and higher SES families. A study by Rawatlal and colleagues (2015) found that adolescents from families with high incomes tended to experience less attachment anxiety than adolescents from families with low incomes. Therefore, it is likely that the current sample may not accurately represent individuals from impoverished families. The current sample also consisted primarily of heterosexual individuals. Sexual orientation has also been associated with child maltreatment history, depressive

symptoms, and attachment style (Hatzenbuehler & McLaughlin, 2017; Roberts, Glymour, & Koenen, 2014; Rosario et al., 2014). Therefore, the current findings may not be entirely indicative of a non-heterosexual individual's experience in the world or their experience after child maltreatment. Although the current study did control for the effects of sexual orientation and country of origin on attachment and depressive symptoms, future research should examine the experience of child maltreatment among those with different cultural backgrounds, ages, income brackets, ethnicities, and sexual orientations in relation to depressive symptoms later in life.

The current study controlled for other types of abuse in order to determine the independent effect of CPM and CPN. Although this was helpful with regard to understanding the unique contributions of each on depressive symptoms and attachment, it may have reduced the strength of the relationships between variables in the study. Additionally, it may not be a realistic representation of abuse due to the moderate correlations between many different types of abuse; individuals who experienced CPM or CPN may have concurrently been experiencing another type of abuse. Regardless, the current study's findings reveal that even when other types of abuse are controlled for, CPM and CPN still significantly impact attachment and the severity of the depressive symptoms later in life.

The current study also used self-report questionnaires to measure child maltreatment, attachment, relationship satisfaction, and depressive symptoms. There are some inherent problems associated with these types of measures. For example, as people are reporting on experiences that may have happened several years before, they may exhibit recall bias, the error caused by a difficulty recalling events or experiences that happened earlier in life. One study examining adult retrospective reports of childhood maltreatment found that there are likely very

few false positives, but a significant amount of false negatives (Hardt & Rutter, 2004). Therefore, the current study may actually underestimate the prevalence and severity of child maltreatment that occurred for these adults during childhood. Other types of response bias may also exist; for example, the individual might feel pressure to provide the answers they think the researcher wants to hear. Additionally, some individuals may not feel comfortable reporting on highly sensitive topics, such as abuse, on their own university campus. There is evidence that reporting on victimization outside of a lab setting actually captures greater experiences of self-reported victimization in childhood (McCallum & Peterson, 2017). Therefore, in future studies, it may be important to allow participants to answer questionnaires in a setting of their choice.

The current study measured attachment, intimate relationship satisfaction, and depressive symptoms at one static point in time. Future longitudinal research is needed to determine how attachment style and relationship satisfaction change over time. Specifically, does relationship satisfaction, status or quality predict changes in attachment style or do changes in attachment style predict changes in intimate relationships? Furthermore, how do important relationships and attachment style impact depressive symptoms over time? As the current study focused entirely on emerging adults between ages 18 and 25, the current study's results cannot be generalized to older adults or children and adolescents. It is essential to investigate potential differences in how attachment impacts depressive symptoms for middle aged and older adults. For example, for those who experience the shift from insecure to secure attachment, is it dependent on age, relationship commitment or satisfaction, or some other variable?

Although the current study was subject to some methodological shortcomings, it also employed a rigorous statistical method and model to gain a comprehensive understanding of potential mechanisms elucidating the relationship between childhood psychological maltreatment

and neglect and later depressive symptoms. Additionally, several unique findings and strategies will contribute notably to the literature. Instead of categorizing individuals into definitive attachment styles or as either having a depressive disorder or not, the current study measured both attachment and depressive symptoms on a continuum. This style of measurement will help to capture a more complex picture of how people can attach or interact with important others and can experience varying levels of depressive symptoms. Additionally, young adults have rarely been investigated with regard to relationship status or satisfaction as a protective factor for insecure attachment. When young adults have been examined, it has been to determine whether attachment style shifts pre or post marriage (Crowell, Treboux, & Waters, 2002). In the current study, only 1.2% (n=4) of participants in a relationship were currently married to their partner. This is more representative of the Canadian population at this age; in 2011, 92.4% of Canadian women and 96.6% of Canadian men age 24 and under had never been married (Milan; 2013). Therefore, this study's makeup of relatively few married young Canadians is more typical of the actual population for this specific variable. It was interesting to find that, for these individuals, being in a relationship did not buffer the impact of child maltreatment on insecure styles of attachment. However, for those who experienced CPM, being in a very satisfying relationship actually exacerbated the effect of maltreatment on avoidant attachment. Future research should continue to examine variables that impact attachment and depressive symptoms for young people in intimate relationships who have experienced childhood maltreatment.

Clinical Implications

Not only does the current study contribute to the body of literature on child maltreatment and clinical symptoms later in life, it also has several important clinical implications. Reporting high levels of depressive symptoms is likely a risk factor for receiving a MDD diagnosis, a

prevalent mental health disorder in Canada (Knoll & MacLennan, 2017). MDD has been associated with difficulties at work and in social settings, as well as with a greater risk for suicide (Knoll & MacLennan, 2017). Therefore, given the findings that CPM and CPN are individually predictive of depressive symptoms during adulthood, it is critical that mental health professionals and physicians alike screen for and monitor psychiatric symptoms closely in individuals with a known history of childhood maltreatment. Considering information regarding abuse histories may prove valuable in constructing informative and comprehensive case conceptualizations for individual's currently experiencing depressive symptoms. Additionally, prevention programs for children who have experienced abuse may effectively impede the development of depressive symptoms later in life. Helping professionals should, accordingly, be cognizant of the effect of maltreatment on attachment strategies, and their subsequent impact on depressive symptoms. Given the finding that endorsing insecure attachment strategies later in life is one mechanism for the development of depressive symptoms, intervention programs could target attachment and teach alternate coping methods. Therapies addressing attachment style may also benefit young adults who are currently experiencing depressive symptoms and distress in intimate relationships, in part due to the CPM or CPN they experienced as children. For example, Emotionally Focused Couple Therapy (EFT) targets distress in intimate relationships and provides an arena for exploring emotional communication and attachment scripts (Johnson, 2002). The development of healthy and satisfying intimate relationships through EFT may be an invaluable asset in reducing current depressive symptoms. Furthermore, positive intimate relationships not only help individuals to retrospectively process and cope with childhood maltreatment, positive marital functioning has also been cited as a powerful protective factor for physical health, including cardiovascular health and immune system functioning (Johnson, 2002;

Kiecolt-Glaser & Newton, 2001). The current study also provides evidence that individuals with a history of CPM and attachment avoidance who are in currently satisfying romantic relationships may still be experiencing distress. Thus, these individuals should be monitored closely despite the possibly misleading existence of satisfying relationships to ensure depressive symptoms are identified and treated. Although the current study did not find evidence that satisfying intimate relationships buffer the effects of maltreatment on insecure attachment styles for adults between ages 18 and 25, emerging adulthood may be prove to be a critical period for developing new primary attachment relationships. During this time, typically involving first relationships and increased independence from parental figures, helping professionals may begin to encourage shifts in attachment with new stable attachment figures. Further research is needed to understand how and when intimate relationships might buffer against insecure attachment, and how this subsequently may impact depressive symptoms.

Summary

Childhood psychological maltreatment and neglect uniquely contribute to the experience of depressive symptoms in young adults. Both avoidant and anxious attachment contribute to this relationship among those who experienced CPM. On the other hand, CPN impacts depressive symptoms by way of avoidant attachment, but not anxious attachment. Currently being involved in a romantic relationship was not a protective factor for the effect of either type of maltreatment on either type of insecure attachment (anxious or avoidant). However, for young adults who experienced CPM and were currently in a very satisfying relationship, the impact of CPM on avoidant attachment (and the subsequent impact of avoidance on depressive symptoms) was actually exacerbated. This study contributes uniquely to the literature and provides potential avenues for prevention, treatment, and future research.

References

Abela, J. R., Hankin, B. L., Haigh, E. A., Adams, P., Vinokuroff, T., & Trayhern, L. (2005). Interpersonal vulnerability to depression in high-risk children: The role of insecure attachment and reassurance seeking. *Journal of Clinical Child and Adolescent Psychology*, *34*(1), 182-192.

Adler, A. D., Strunk, D. R., & Fazio, R. H. (2015). What changes in cognitive therapy for depression? An examination of cognitive therapy skills and maladaptive beliefs. *Behavior Therapy*, *46*(1), 96-109. doi:10.1016/j.beth.2014.09.001

Agishtein, P., & Brumbaugh, C. (2013). Cultural variation in adult attachment: The impact of ethnicity, collectivism, and country of origin. *Journal of Social, Evolutionary, and Cultural Psychology*, *7*(4), 384.

Amirkhan, J. H., & Marckwordt, M. (2016). Past trauma and current stress and coping: Toward a general model. *Journal of Loss and Trauma*, 22(1), 47-60. doi:10.1080/01612840.2016.1182410

APSAC. (1995). *Psychosocial evaluation of suspected psychological maltreatment in children and adolescents. Practice Guidelines.* American Professional Society on the Abuse of Children.

Bandura, A. (1962) Social learning through imitation. In M. R. Jones (ed.), *Nebraska symposium on motivation* (pp. 211-269). Oxford, England: University of Nebraska Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social*

and Personal Relationships, *7*(2), 147-178. doi:10.1177/0265407590072001

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226. doi:10.1037/0022-3514.61.2.226

Bifulco, A., Kwon, J., Jacobs, C., Moran, P. M., Bunn, A., & Beer, N. (2006). Adult attachment style as mediator between childhood neglect/abuse and adult depression and anxiety. *Social Psychiatry and Psychiatric Epidemiology*, *41*(10), 796-805. doi:10.1007/s00127-006-0101-z

Boden, M. T., John, O. P., Goldin, P. R., Werner, K., Heimberg, R. G., & Gross, J. J. (2012). The role of maladaptive beliefs in cognitive-behavioral therapy: Evidence from social anxiety disorder. *Behaviour Research and Therapy*, *50*(5), 287-291. doi:10.1016/j.brat.2012.02.007

Bosmans, G., Braet, C., & Van Vlierberghe, L. (2010). Attachment and symptoms of psychopathology: Early maladaptive schemas as a cognitive link? *Clinical Psychology & Psychotherapy*, *17*(5), 374-385.

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664-678. doi:10.1111/j.1939-0025.1982.tb01456.x

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In *Attachment Theory and Close Relationships (pp.* 46-76). New York, NY: Guilford Press.

Briere, J. (2011). Trauma Symptom Inventory–2 (TSI–2). Odessa, FL: Psychological Assessment Resources.

Briere, J., Godbout, N., & Runtz, M. (2012). The Psychological Maltreatment Review (PMR):

Initial reliability and association with insecure attachment in adults. *Journal of Aggression, Maltreatment & Trauma*, *21*(3), 300-320. doi:10.1080/10926771.2012.659801

Briere, J., & Runtz, M. (1990). Differential adult symptomatology associated with three types of child abuse histories. *Child Abuse & Neglect*, *14*(3), 357-364. doi:10.1016/0145-2134(90)90007-G

Bromberger, J. T., Harlow, S., Avis, N., Kravitz, H. M., & Cordal, A. (2004). Racial/ethnic differences in the prevalence of depressive symptoms among middle-aged women: the Study of Women's Health Across the Nation (SWAN). *American Journal of Public Health*, *94*(8), 1378-1385.

Browne, C., & Winkelman, C. (2007). The effect of childhood trauma on later psychological adjustment. *Journal of Interpersonal Violence*, *22*(6), 684-697.

Bruce, M. L. (2002). Psychosocial risk factors for depressive disorders in late life. *Biological psychiatry*, *52*(3), 175-184.

Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, *82*(2), 217-225. doi:10.1016/j.jad.2003.12.013

Chopik, W. J., & Edelstein, R. S. (2014). Age differences in romantic attachment around the world. *Social Psychological and Personality Science*, *5*(8), 892-900.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioural sciences (*2nd ed.). Hillsdale, NJ: Erlbaum.

Colman, R. A., & Widom, C. S. (2004). Childhood abuse and neglect and adult intimate relationships: A prospective study. *Child Abuse & Neglect*, *28*(11), 1133-1151. doi:10.1016/j.chiabu.2004.02.005

Crawford, E., & Wright, M. O. D. (2007). The impact of childhood psychological maltreatment on interpersonal schemas and subsequent experiences of relationship aggression. *Journal of Psychological Maltreatment*, *7*(2), 93-116. doi:10.1300/J135v07n02_06

Davis, J. L., Petretic-Jackson, P. A., & Ting, L. (2001). Intimacy dysfunction and trauma symptomatology: Long-term correlates of different types of child abuse. *Journal of Traumatic Stress*, *14*(1), 63-79. doi:10.1023/A:1007835531614

Evraire, L. E., Ludmer, J. A., & Dozois, D. J. (2014). The influence of priming attachment styles on excessive reassurance seeking and negative feedback seeking in depression. *Journal of Social and Clinical Psychology*, *33*(4), 295-318.

Fallon, B., MacLaurin, B., Daciuk, J., Felstiner, C., Black, T., Tonmyr, L., ... & Cloutier, R. (2010). *Canadian Incidence Study of Reported Child Abuse and Neglect, 2008*. Ottawa: Public Health Agency of Canada.

Finzi, R., Cohen, O., Sapir, Y., & Weizman, A. (2000). Attachment styles in maltreated children: A comparative study. *Child Psychiatry and Human Development*, *31*(2), 113-128.

Fortuna, K., & Roisman, G. I. (2008). Insecurity, stress, and symptoms of psychopathology: Contrasting results from self-reports versus interviews of adult attachment. *Attachment & human development*, *10*(1), 11-28.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*(2), 350-365. doi:10.1037/0022-3514.78.2.350

Friedmann, E., Son, H., Thomas, S. A., Chapa, D. W., & Lee, H. J. (2014). Poor social support is associated with increases in depression but not anxiety over 2 years in heart failure outpatients. *The Journal of cardiovascular nursing*, *29*(1).

Gerull, F. C., & Rapee, R. M. (2002). Mother knows best: effects of maternal modelling on the acquisition of fear and avoidance behaviour in toddlers. *Behaviour Research and Therapy*, *40*(3), 279-287.

Gibb, B. E., Alloy, L. B., Abramson, L. Y., Rose, D. T., Whitehouse, W. G., Donovan, P., ... & Tierney, S. (2001). History of childhood maltreatment, negative cognitive styles, and episodes of depression in adulthood. *Cognitive Therapy and Research*, *25*(4), 425-446. doi:10.1023/A:1005586519986

Glaser, D. (2002). Psychological maltreatment and neglect (psychological maltreatment): A conceptual framework. *Child Abuse & Neglect*, *26*(6), 697-714. doi:10.1016/S0145-2134(02)00342-3

Godbout, N., Hodges, M., Briere, J., & Runtz, M. (2016). Structural Analysis of the Trauma Symptom Inventory–2. *Journal of Aggression, Maltreatment & Trauma*, *25*(3), 333-346. doi:10.1080/10926771.2015.1079285

Godbout, N., Lussier, Y., & Sabourin, S. (2006). Early abuse experiences and subsequent gender differences in couple adjustment. *Violence and Victims*, *21*(6), 744-760. doi:10.1891/0886-6708.21.6.744

Hames, J. L., Hagan, C. R., & Joiner, T. E. (2013). Interpersonal processes in depression. *Annual Review of Clinical Psychology*, *9*, 355-377. doi:10.1146/annurev-clinpsy-050212-185553

Hankin, B. L. (2005). Childhood maltreatment and psychopathology: Prospective tests of attachment, cognitive vulnerability, and stress as mediating processes. *Cognitive Therapy and Research*, *29*(6), 645-671.

Hankin, B. L., Kassel, J. D., & Abela, J. R. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: Prospective investigations of cognitive risk and

interpersonal stress generation as mediating mechanisms. *Personality and Social Psychology Bulletin*, *31*(1), 136-151.

Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry*, *45*(2), 260-273.

Hart, S. N., Binggeli, N. J., & Brassard, M. R. (1998). Evidence for the effects of psychological maltreatment. *Journal of Psychological Maltreatment, 1,* 27–58. doi:10.1300/J135v01n01_03

Hatzenbuehler, M. L., & McLaughlin, K. A. (2017). Sex, Sexual Orientation, and Depression. *The Oxford Handbook of Mood Disorders*, 49.

Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, *50*(1), 1-22. doi:10.1080/00273171.2014.962683

Heim, C., Newport, D. J., Heit, S., Graham, Y. P., Wilcox, M., Bonsall, R., . . . Nemeroff, C. B. (2000). Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in child- hood. *Journal of the American Medical Association*, 284, 592–597. doi:10.1001/jama.284.5.592

Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse & Neglect*, *26*(6), 679-695. doi:10.1016/S0145-2134(02)00341-1

Hilton, A., & Armstrong, R. (2006). Statnote 6: post-hoc ANOVA tests.

Holland, A. S., Fraley, R. C., & Roisman, G. I. (2012). Attachment styles in dating couples: Predicting relationship functioning over time. *Personal Relationships*, *19*(2), 234-246. doi:10.1111/j.1475-6811.2011.01350.x

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A

meta-analytic review. *PLoS Med*, *7*(7), e1000316. doi:10.1371/journal.pmed.1000316

Infurna, M. R., Reichl, C., Parzer, P., Schimmenti, A., Bifulco, A., & Kaess, M. (2016). Associations between depression and specific childhood experiences of abuse and neglect: A meta-analysis. *Journal of Affective Disorders*, *190*, 47-55. doi:10.1016/j.jad.2015.09.006

Johnson, S. M. (2012). *The practice of emotionally focused couple therapy: Creating connection*. New York, NY: Routledge.

Johnson, S. M. (2002). *Emotionally focused couple therapy with trauma survivors: Strengthening attachment bonds*. New York, NY: Guilford Press.

Johnson, J. G., Smailes, E. M., Cohen, P., Brown, J., & Bernstein, D. P. (2000). Associations between four types of childhood neglect and personality disorder symptoms during adolescence and early adulthood: Findings of a community-based longitudinal study. *Journal of personality disorders*, *14*(2), 171-187.

Kalibatseva, Z., Leong, F. T. L., & Ham, E. H. (2014). A symptom profile of depression among Asian Americans: is there evidence for differential item functioning of depressive symptoms? *Psychological medicine*, *44*(12), 2567-2578.

Kang, H. (2013). The prevention and handling of the missing data. *Korean journal of anesthesiology*, *64*(5), 402-406.

Kassel, J. D., Wardle, M., & Roberts, J. E. (2007). Adult attachment security and college student substance use. *Addictive behaviors*, *32*(6), 1164-1176.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). Dyadic data analysis. New York, NY: Guilford Press.

Krause, E. D., Mendelson, T., & Lynch, T. R. (2003). Childhood emotional invalidation and adult psychological distress: The mediating role of emotional inhibition. *Child Abuse & Neglect*, *27*(2), 199-213. doi:10.1016/S0145-2134(02)00536-7

Leserman, J., Drossman, D. A., & Li, Z. (1995). The reliability and validity of a sexual and physical abuse history questionnaire in female patients with gastrointestinal disorders. *Behavioral Medicine*, *21*(3), 141-150. doi:10.1080/08964289.1995.9933752

Li, T., & Chan, D. K. S. (2012). How anxious and avoidant attachment affect romantic relationship quality differently: A meta-analytic review. *European Journal of Social Psychology*, *42*(4), 406-419.

Liu, R. T., Alloy, L. B., Abramson, L. Y., Iacoviello, B. M., & Whitehouse, W. G. (2009). Emotional maltreatment and depression: Prospective prediction of depressive episodes. *Depression and Anxiety*, *26*(2), 174-181. doi:10.1002/da.20545

Liu, R. X., & Chen, Z. Y. (2006). The effects of marital conflict and marital disruption on depressive affect: A comparison between women in and out of poverty. *Social Science Quarterly*, *87*(2), 250-271. doi:10.1111/j.1540-6237.2006.00379.x

Mackinnon, S. P., Sherry, S. B., Antony, M. M., Stewart, S. H., Sherry, D. L., & Hartling, N. (2012). Caught in a bad romance: Perfectionism, conflict, and depression in romantic relationships. *Journal of Family Psychology*, *26*(2), 215-225. doi:10.1037/a0027402

Markon, K. E., Chmielewski, M., & Miller, C. J. (2011). The reliability and validity of discrete and continuous measures of psychopathology: a quantitative review.

Martins, C. M. S., Baes, C. V. W., de Carvalho Tofoli, S. M., & Juruena, M. F. (2014). Psychological maltreatment in childhood is a differential factor for the development of

depression in adults. *The Journal of Nervous and Mental Disease*, *202*(11), 774-782. doi:10.1097/NMD.0000000000000202

Massing-Schaffer, M., Liu, R. T., Kraines, M. A., Choi, J. Y., & Alloy, L. B. (2015). Elucidating the relation between childhood psychological maltreatment and depressive symptoms in adulthood: The mediating role of maladaptive interpersonal processes. *Personality and Individual Differences*, *74*, 106-111. doi:10.1016/j.paid.2014.09.045

McCallum, E. B., & Peterson, Z. D. (2017). Women's Self-Report of Sexual Victimization: An Experimental Examination of the Influence of Race, Mode of Inquiry, Setting, and Researcher Contact. *Violence against women*, *23*(7), 850-870.

McGrath, P. J., Nunes, E. V., & Quitkin, F. M. (2015). Current concepts in the treatment of depression in alcohol-dependent patients. *Dual Diagnosis*, 75-90.

Milan, A. (2013). Marital status: overview, 2011. *Statistics Canada*, (91-209).

Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology*, *49*(1), 377-412. doi:10.1146/annurev.psych.49.1.377

Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... & Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect*, *38*(2), 224-233. doi:10.1016/j.chiabu.2013.09.004

Myers, J. E. (2002). *The APSAC handbook on child maltreatment*. Thousand Oaks, California: Sage.

Noftle, E. E., & Shaver, P. R. (2006). Attachment dimensions and the big five personality traits: Associations and comparative ability to predict relationship quality. *Journal of Research in Personality*, *40*(2), 179-208. doi:10.1016/j.jrp.2004.11.003

Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and evaluation in counseling and development*, *36*(1), 9-22.

Pollak, S. D., Cicchetti, D., Hornung, K., & Reed, A. (2000). Recognizing emotion in faces: Developmental effects of child abuse and neglect. *Developmental Psychology, 36,* 679–688. doi:10.1037/0012-1649.36.5.679

Public Health Agency of Canada (2002). A Report on Mental Illness in Canada. Retrieved from http://www.phac-aspc.gc.ca/publicat/miic-mmac/pdf/men_ill_e.pdf

Rholes, W. S., Simpson, J. A., & Friedman, M. (2006). Avoidant attachment and the experience of parenting. *Personality and Social Psychology Bulletin*, *32*(3), 275-285.

Riggs, S. A., Cusimano, A. M., & Benson, K. M. (2011). Childhood psychological maltreatment and attachment processes in the dyadic adjustment of dating couples. *Journal of Counseling Psychology*, *58*(1), 126-138. doi:10.1037/a0021319

Roberts, A. L., Glymour, M. M., & Koenen, K. C. (2014). Considering Alternative Explanations for the Associations Among Childhood Adversity, Childhood Abuse, and Adult Sexual Orientation: Reply to and. *Archives of Sexual Behavior*, *43*(1), 191.

Rodd, K., Mirotchnick, C., & Runtz, M.G. (2016, June). *The Role of Adult Attachment in Relation to Childhood Psychological Maltreatment and Neglect and Subsequent Depressive Symptoms*. Poster presented at the annual meeting of the Canadian Psychological Association, Victoria, BC.

Rosario, M., Reisner, S. L., Corliss, H. L., Wypij, D., Frazier, A. L., & Austin, S. B. (2014). Disparities in depressive distress by sexual orientation in emerging adults: The roles of attachment and stress paradigms. *Archives of Sexual Behavior*, *43*(5), 901-916.

Rutter, M., & Sroufe, L. A. (2000). Developmental psychopathology: Concepts and challenges. *Development and Psychopathology, 12,* 265–296.

Sabourin, S., Valois, P., & Lussier, Y. (2005). Development and validation of a brief version of the dyadic adjustment scale with a nonparametric item analysis model. *Psychological Assessment*, *17*(1), 15-27. doi:10.1037/1040-3590.17.1.15

Santini, Z. I., Koyanagi, A., Tyrovolas, S., Mason, C., & Haro, J. M. (2015). The association between social relationships and depression: a systematic review. *Journal of affective disorders*, *175*, 53-65.

Schafer, J. L., & Graham, J. W. (2002). Missing data: our view of the state of the art. *Psychological methods*, *7*(2), 147-177.

Schirmer, L. L., & Lopez, F. G. (2001). Probing the social support and work strain relationship among adult workers: Contributions of adult attachment orientations. *Journal of Vocational Behavior*, *59*(1), 17-33. doi:10.1006/jvbe.2000.1777

Shapero, B. G., Black, S. K., Liu, R. T., Klugman, J., Bender, R. E., Abramson, L. Y., & Alloy, L. B. (2014). Stressful life events and depression symptoms: The effect of childhood psychological maltreatment on stress reactivity. *Journal of Clinical Psychology*, *70*(3), 209-223. doi:10.1002/jclp.22011

Sirois, F. M., Millings, A., & Hirsch, J. K. (2016). Insecure attachment orientation and well-being in emerging adults: The roles of perceived social support and fatigue. *Personality and Individual Differences*, *101*, 318-321.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, *38*(1),15-28. doi:10.2307/350547

Spertus, I. L., Yehuda, R., Wong, C. M., Halligan, S., & Seremetis, S. V. (2003). Childhood psychological maltreatment and neglect as predictors of psychological and physical symptoms in women presenting to a primary care practice. *Child Abuse & Neglect*, *27*(11), 1247-1258. doi:10.1016/j.chiabu.2003.05.001

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & IJzendoorn, M. H. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, *24*(1), 37-50. doi:10.1002/car.2353

Trickett, P. K., & McBride-Chang, C. (1995). The developmental impact of different forms of child abuse and neglect. *Developmental Review, 15,* 311–337. doi:10.1006/drev.1995.1012

Trocmé, N. M., Tourigny, M., MacLaurin, B., & Fallon, B. (2003). Major findings from the Canadian incidence study of reported child abuse and neglect. *Child Abuse & Neglect*, *27*(12), 1427-1439. doi:10.1016/j.chiabu.2003.07.003

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security in infancy and early adulthood: A twenty-year longitudinal study. *Child development*, *71*(3), 684-689.

Wells, T. T., Vanderlind, W. M., Selby, E. A., & Beevers, C. G. (2014). Childhood abuse and vulnerability to depression: Cognitive scars in otherwise healthy young adults. *Cognition & Emotion*, *28*(5), 821-833. doi:10.1080/02699931.2013.864258

Widom, C. S., DuMont, K., & Czaja, S. J. (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. *Archives of General Psychiatry*, *64*(1), 49-56. doi:10.1001/archpsyc.64.1.49

Wolfe, D. A., Scott, K., Wekerle, C., & Pittman, A. L. (2001). Child maltreatment: Risk of adjustment problems and dating violence in adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(3), 282-289. doi:10.1097/00004583-200103000-00007

Wright, M. O. D., Crawford, E., & Del Castillo, D. (2009). Childhood emotional maltreatment and later psychological distress among college students: The mediating role of maladaptive schemas. *Child Abuse & Neglect*, *33*(1), 59-68. doi:10.1016/j.chiabu.2008.12.007

Appendix A: Online Consent Form

Life Experiences, Health and Relationships Study

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

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

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

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

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

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

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

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

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

Compensation: To compensate you for your participation, you will receive bonus points towards your course grade in a psychology course at the University of Victoria. It is important for you to know that it is unethical to provide undue compensation to research participants, and if you agree to participate in this study, this form of compensation should not be coercive. If you would not participate if the compensation were not offered, then you should decline participation at this time.

Results from the Study: After you complete the study, you will receive a debriefing form that outlines the basic purpose of the research in more detail. If you would like a summary of the findings after the study is completed, you can contact Dr. Runtz directly or check her website (at

http://web.uvic.ca/~runtzweb/) for summaries of papers prepared from this project. It is anticipated that the results of this study will be shared with others in the following ways: in presentations to other graduate students and faculty, in conference presentations, on the website, and in published peer- reviewed articles.

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

THANK YOU FOR YOUR INTEREST AND PARTICIPATION IN THIS STUDY.

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

University of Victoria Counselling Services (on campus), 250-721-8341, http://www.coun.uvic.ca/ NEED Crisis and Information Line (community agency), 250-386-6323, 1-888-494-3888, http://www.needcrisis.bc.ca/
Help Line for Children, 250-310-1234, www.gov.bc.ca/mcf/ (information on reporting child maltreatment)

British Columbia Psychological Association (BCPA) Referral Service, 1-800-730-0522, http://www.psychologists.bc.ca/referral.html
Women's Sexual Assault Centre: 250-383-3232, http://www.vwsac.com/
Island Sexual Health Society: 250-592-3479, http://islandsexualhealth.org/

University of Victoria Health Services: 250-721-8492, http://health.uvic.ca/

To print a copy of this form, please use CTRL + P or follow the usual methods for printing from your web browser.

Appendix B: Online Debriefing Form

Thank you! You are almost finished.

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

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

Purpose of the Study

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

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

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

PLEASE CLICK SUBMIT TO FINALIZE YOUR PARTICIPATION IN THIS STUDY

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

THANK YOU!

Appendix C: Demographic Information

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

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

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

4. Which of the below best describes your ethnic background? (Check all that apply and provide specifics where indicated).
Asian, Southeast Asian, South Asian
Black/African American/African Canadian

Caucasian/White/European Canadian/European American First Nations/Aboriginal/Native Canadian/Native American Hispanic/Latino
Mixed (Specify):

Other (Specify):

5. What is your country of origin? _____

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

English French Spanish Other

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

8. What is the highest level of education obtained by your parents or a parental figure? If applicable, choose the parent with the highest level of education.

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

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

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

Yes No No answer

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

9d. What is your combined income including your partner and any depends who bring income into the household, before any of you pay taxes?

Less than $10,000
$10 000-$19 999
$20 000-$29 999
$30 000-$39 999
$40 000-$49 999
$50 000-$59 999
$60 000-$69 999
$70 000-$79 999

$80 000-$89 999
$90 000-$99 999
$100 000 or more
No answer

10. If you were living with your family when you were 17, how much did your family members (combined) make at that time, before taxes?

Less than $10,000
$10 000-$19 999
$20 000-$29 999
$30 000-$39 999
$40 000-$49 999
$50 000-$59 999
$60 000-$69 999
$70 000-$79 999
$80 000-$89 999
$90 000-$99 999
$100 000 or more
Not applicable

11. Are you currently in a romantic relationship?

Yes No No answer

12. What is your current relationship status?

Single, never married
Living with partner (common-law)
Married
Separated
Divorced
Widowed
Other

13. What is your sexual orientation?

Heterosexual
Bisexual
Lesbian or Gay
Other

14a. What is your current country of residence?

Canada
United States of America
Other

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

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

Yes No No answer

15b. What academic year are you in?

First year undergraduate (Freshman)
Second year undergraduate (Sophomore)
Third year undergraduate (Junior)
Forth year undergraduate (Senior)
Fifth + year undergraduate
Graduate student
Other

15c. What is your academic major?

Psychology
Undeclared
Not applicable
Other

Appendix D: Psychological Maltreatment Review (PMR)

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

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

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

1. Yelled at you

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

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

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

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

Appendix E: Family Violence Screening Questionnaire (FVSQ)

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

1. Hit, kick, or beat you.

	Never	Once a year	Twice a year	3-5 times a year	6-10 times a year	11-20 times a year	Over 20 times a year	No answer
Your Mother								
Your Father								

2. Seriously threatened your life.

	Never	Once a year	Twice a year	3-5 times a year	6-10 times a year	11-20 times a year	Over 20 times a year	No answer
Your Mother								
Your Father								

Appendix F: Childhood Sexual Abuse (CSA)

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

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

1. Has anyone ever exposed the sex organs of their body to you when you did not want this?
   Yes No No Answer
2. Has anyone ever threatened to have sex with you when you did not want this?
3. Has anyone ever touched the sex organs of your body when you did not want this?
4. Has anyone ever made you touch the sex organs of their body when you did not want this?
5. Has anyone ever forced you to have oral sex when you did not want this?
6. Has anyone ever forced you to have intercourse (anal or vaginal) when you did not want this?

Appendix G: Experiences in Close Relationships (ECR)

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

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

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

Strongly Disagree		Neutral				Strongly Agree	No Answer
1	2	3	4	5	6	7	
○	○	○	○	○	○	○	○

2. I worry about being abandoned.
3. I am very comfortable being close to romantic partners.
4. I worry a lot about my relationships.
5. Just when my partner starts to get close to me I find myself pulling away.
6. I worry that romantic partners won't care about me as much as I care about them.
7. I get uncomfortable when a romantic partner wants to be very close.
8. I worry a fair amount about losing my partner.
9. I don't feel comfortable opening up to romantic partners.
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
11. I want to get close to my partner, but I keep pulling back.
12. I often want to merge completely with romantic partners, and this sometimes scares them away.
13. I am nervous when partners get too close to me.
14. I worry about being alone.
15. I feel comfortable sharing my private thoughts and feelings with my partner.
16. My desire to be very close sometimes scares people away.
17. I try to avoid getting too close to my partner.
18. I need a lot of reassurance that I am loved by my partner.
19. I find it relatively easy to get close to my partner.
20. Sometimes I feel that I force my partners to show more feeling, more commitment.
21. I find it difficult to allow myself to depend on romantic partners.
22. I do not often worry about being abandoned.
23. I prefer not to be too close to romantic partners.
24. If I can't get my partner to show interest in me, I get upset or angry.
25. I tell my partner just about everything.
26. I find that my partner(s) don't want to get as close as I would like.
27. I usually discuss my problems and concerns with my partner.
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
29. I feel comfortable depending on romantic partners.
30. I get frustrated when my partner is not around as much as I would like.

31. I don't mind asking romantic partners for comfort, advice, or help.
32. I get frustrated if romantic partners are not available when I need them.
33. It helps to turn to my romantic partner in times of need.
34. When romantic partners disapprove of me, I feel really bad about myself.
35. I turn to my partner for many things, including comfort and reassurance.
36. I resent it when my partner spends time away from me.

Appendix H: Dyadic Adjustment Scale (DAS-4)

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

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

1. How often do you discuss or have you considered divorce, separation, or terminating your relationship? (*reverse code)*
2. In general, how often do you think that things between you and your partner are going well?
3. Do you confide in your mate?
4. The scale below represents different degrees of happiness in your relationship. The category "happy" represents the degree of happiness in most relationships. Please choose the number which best describes the degree of happiness, all things considered, of your relationship.

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

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

Appendix I: Depression Subscale of Trauma Symptom Inventory (TSI-2)

Please read all of these instructions carefully before beginning. This questionnaire describes experiences that may or may not have happened to you. Please mark the one answer that best indicates how often each of the following experiences have happened to you in the last 6 months.

Mark 1 if your answer is NEVER; it has not happened at all in the last 6 months.
Mark 2 if it has happened in the last 6 months, but only RARELY.
Mark 3 if it happened SOMETIMES in the last 6 months.
Mark 4 if your answer is OFTEN; it has happened often in the last 6 months.

Never	Rarely	Sometimes	Often	No answer
1	2	3	4	
○	○	○	○	○

Sample Items (Scale is copyrighted):

2. Sadness.
44. Feeling so depressed that you avoided people.
126. Hating yourself.