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The model of self mediates the association between childhood psychological maltreatment and body dissatisfaction in women

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THE MODEL OF SELF MEDIATES THE ASSOCIATION BETWEEN
CHILDHOOD PSYCHOLOGICAL MALTREATMENT AND BODY
DISSATISFACTION IN WOMEN

by

Michael A. Kong

A Thesis
Submitted to the Faculty of Graduate Studies
through Psychology
in Partial Fulfillment of the Requirements for
the Degree of Master of Arts at the
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Windsor, Ontario, Canada

2011

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maltreatment and body dissatisfaction in women

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ABSTRACT

Psychological maltreatment has been shown to be the most prevalent form of childhood maltreatment and has been shown to have a greater association with body dissatisfaction than other forms of maltreatment. The mechanisms that affect the association between psychological maltreatment and body dissatisfaction are unclear; however, research examining attachment security (model-of-self, model-of-other) and perceived social support suggest these constructs as possible mediators. The current study aimed to determine if the model-of-self and model-of-other, and perceived social support mediate the association between psychological maltreatment and body dissatisfaction using structural equation modelling. Two-hundred and seventy-eight female undergraduates completed a set of randomized on-line questionnaires. The model-of-self was found to mediate the association between psychological maltreatment and body dissatisfaction. Implications, limitations, and future directions are discussed.

DEDICATION

I would like to dedicate this thesis to my mother Jin S. Kong, who has provided me with unwavering support from start to finish of this thesis.

ACKNOWLEDGEMENTS

This thesis would not have been possible without the support of my supervisor Dr. Joséé Jarry, who has allowed me to use this thesis as a creative outlet to explore my research interests. She has provided me with invaluable support and timely feedback throughout the entire process, which I am extremely grateful for. I would also like to express my gratitude to my committee members Dr. Kimberly Babb, Dr. Dennis Jackson, and Dr. Sharon McMahon for their support and feedback.

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CHAPTER I

INTRODUCTION

Objectives of Present Study

The present study examined the association between childhood psychological maltreatment and body image disturbance through structural equation modeling. The constructs of adult attachment and perceived social support were integrated as proposed mediators between psychological maltreatment and body image dissatisfaction.

Psychological maltreatment consists of experiences of emotional neglect and/or emotional abuse and has been defined by the American Professional Society on the Abuse of Children (APSAC) as, “a repeated pattern of caregiver behavior or extreme incident(s) that convey to children that they are worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another’s needs” (APSAC, 2002, p. 81).

Body image disturbance is an umbrella term, conceptualized as encompassing several components including affective, cognitive, behavioural, and perceptual features (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Cash, 1994) that characterize eating disorders. The degree of distortion in one or a combination of these components can lead to body related disturbances such as body size overestimation, weight and shape dissatisfaction, and dietary restriction.

The majority of the literature examining the effects of child maltreatment on body image focuses on the differential effects of child physical and sexual abuse (Leonard, Steiger, & Kao, 2003; Treuer, Koperdak, Rozsa, & Furedi, 2005; Welch & Fairburn, 1996; Wonderlich et al., 2001, Wonderlich, Brewerton, Jovic, Dansky, & Abbott, 1997). However, recent research has demonstrated the existence of a negative association

between child psychological maltreatment and adult attachment security (Cassidy & Berlin, 1994; Egeland & Sroufe, 1981; Finzi, Cohen, Sapir, & Weizman, 2000; Finzi, Ram, Har-Even, Shnit, & Weizman, 2001; Isabella, 1993; Karavasilis, Doyle & Markerwicz, 2003; Kearns, Tomich, Aspelmeier, & Contreras, 2000; Stevenson-Hinde & Shouldice, 1995). Adults who experience child psychological maltreatment not only tend to have insecure attachment styles, they also develop inadequate means of perceiving and seeking social support (Anders & Tucker, 2000; Collins & Feeney, 2004; Florian, Mikulincer, & Bucholtz, 1995; Vogel & Wei, 2005). This, in turn, makes them more susceptible to developing and maintaining various psychopathologies (Muller & Lemieux, 2000; McLewin & Muller, 2006).

In sum, the literature suggests that adult attachment style will mediate the association between the traumatic experiences of child psychological maltreatment and perceived social support, which in turn will influence levels of body image disturbance. The present study contributes to a growing body of literature by investigating the link between psychological maltreatment and body image. The roles of adult attachment style and perceived social support as possible mediators of this association were examined. First, this study aimed to determine the relation between psychological maltreatment and body dissatisfaction. Second, this study tested two models to determine if attachment security and perceived social support mediated the association between psychological maltreatment and body dissatisfaction by testing the hypothesized models.

Rationale for Present Study

Psychological maltreatment is prevalent and has been associated with many adverse psychological outcomes. Rates of confirmed psychological maltreatment have

been found to be as high as 4% in the general population (APSAC, 2002). However, these are suggested to be an underrepresentation because of the subtle nature of psychological maltreatment and underreporting by both parents and children (Hart, Binggeli, & Brassard, 1998). One telephone incidence study conducted on a nationally representative sample of 3,458 parents found that 63% of parents reported one or more instances of verbal aggression towards their children occurring in the previous year (Vissing, Straus, Gelles, & Harrop, 1991). Verbal aggression was defined as “communication intended to cause psychological pain to another person, or a communication perceived as having that intent” (p. 224). When the criterion for verbal aggression was set at 25 or more (exceeding twice a month on average) incidents over the past year, 11.3% of parents still reported meeting this criterion.

Psychological maltreatment is conceptualized as encompassing both emotional abuse and emotional neglect and can exist independently of other forms of maltreatment (Glaser, 2002). However, psychological maltreatment is often accompanied by other forms of maltreatment (Briere & Runtz, 1990; Claussen & Crittenden, 1991; Ney, Fung, & Wickett, 1994). In one study, psychological maltreatment occurred in 90% of children who also had been physically abused and neglected (Claussen & Crittenden, 1991). In addition, it was found that psychological maltreatment was more predictive of impairments in children’s development than was the severity of physical abuse.

Experiences of child psychological maltreatment increase the risk for developing heightened body image dissatisfaction (Dunkley, Masheb, & Grilo, 2010; Kennedy, Ip, Samra, & Gorzalka, 2007). The majority of the literature reporting on the association between child maltreatment and adult body dissatisfaction is focused on physical and

sexual abuse, generally overlooking the role of psychological maltreatment (Dunkley et al., 2010; Leonard et al., 2003; Preti, Incani, Camboni, Donatella, & Petretto, 2006; Treuer et al., 2005; Welch & Fairburn, 1996; Wonderlich et al., 2000; Wonderlich et al., 2001; Wonderlich, Brewerton, Jovic, Dansky, & Abbott, 1997). Dunkley and colleagues (2010) found child emotional abuse to have a greater association with body dissatisfaction than did other forms of maltreatment in a sample of 170 patients with binge eating disorder. This is important as body dissatisfaction predicts the development of eating disorders (Stice & Shaw, 2002; Stice, Ng, & Shaw, 2010). Therefore, understanding how psychological maltreatment affects body dissatisfaction is a highly relevant question.

As a result of psychological maltreatment, individuals often develop an avoidant/dismissing or an anxious/preoccupied attachment style (Baer & Daly Martinez, 2006; Egeland & Sroufe, 1981; Finzi et al., 2000; Finzi et al., 2001; George, 1996; Morton & Browne, 1998). These attachment styles involve the disruption of an individual's model-of-self and model-of-other in interpersonal relationships, where the individual develops a negative perception of his or her self-worth and of others as unreliable sources of support.

A negative model-of self and negative model-of other increases the risk for perceiving fewer social support resources (Anders & Tucker, 2000; Collins & Feeney, 2004; Florian, Mikulincer, & Bucholtz, 1995; Vogel & Wei, 2005), and increased body dissatisfaction (Cash et al., 2004; Elgin & Pritchard, 2006; Troisi, Di Lorenzo, Alcini, Nanni, Di Pasquale, & Siracusano, 2006). Thus, an association can be drawn between attachment style and perceived social support through the development of negative self-

and-other models; however, the influence of attachment style and perceived social support on body dissatisfaction for victims of psychological maltreatment is still unclear.

Childhood Psychological Maltreatment

Empirical evidence suggests that the long-term effects of all types of maltreatment are embedded in psychological experiences. It also has been demonstrated that experiences of psychological maltreatment often co-occur with other forms of maltreatment. Thus, psychological maltreatment and its associated trauma may be the underlying construct that embodies many components of the experiences of child abuse and neglect. In other words, the emotional trauma that is a product of abuse and neglect may be the pathway through which negative psychological outcomes manifest. In addition, studies have demonstrated that the severity of the negative effects of emotional abuse and neglect is equal to or greater than that of other forms of maltreatment, highlighting the importance of studying psychological maltreatment (Hart et al., 1998; Hildyard & Wolfe, 2002; Stowman & Donohue, 2005).

Not all experiences of psychological maltreatment leave a lasting negative impression on children. If incidents of psychological maltreatment from caregivers are attended to and resolved appropriately, the distress associated with maltreatment may not be traumatic. The responsiveness shown by caregivers indicates they are indeed a reliable source of support and that they will attenuate the distress experienced by the child. These caregivers reaffirm the child's positive expectations of caregivers by demonstrating that they are a reliable and available source of support. On the other hand, if distress from maltreatment is not attended to and resolved, the trauma associated with the maltreatment

can lead to pathology through negative self-worth and a view of caregivers as unavailable to provide support (Courtois, Ford, Herman, & Van Der Kolk, 2009).

Psychological maltreatment is conceptualized as an umbrella term that encompasses emotional neglect and emotional abuse. Emotional neglect is comprised of acts of *omission* and is characterized by unawareness, unavailability, and unresponsiveness of a caregiver to meet a child's emotional and psychological needs, including the provision of love, nurturance, and support, especially during times of distress (Briere, 2002; Glaser, 2002; Hart et al., 1998). Emotional abuse is comprised of acts of *commission* and is characterized by behavioural acts of hostility and terrorism toward a child, including denigration and exposure to confusing or traumatic events (Briere, 2002; Glaser, 2002; Hart et al., 1998). A single incident of emotional abuse or emotional neglect does not constitute psychological maltreatment; multiple, repetitive acts of emotional maltreatment toward a child must take place. An exception to this definition occurs when a child witnesses or endures an extremely traumatic act (e.g., a child being subjected to an entirely unpredictable serious physical attack or rape; O'Hagan, 1995).

Childhood Emotional Neglect

Emotional neglect has received little attention compared to other forms of maltreatment. Due to its unobservable and subtle nature, emotional neglect often occurs repeatedly over a long period of time and the negative developmental consequences are not immediately apparent. In addition, the subtleness of emotional neglect may be a reason for its under-reporting and its under-recognition in empirical research (Glaser, 2002; Hildyard & Wolfe, 2002). Because the effect of emotional neglect does not become

apparent until later in a child's development, it is difficult to ascertain its specific negative consequences.

Persistent, repeated exposures to emotional neglect from caregivers leave children feeling unworthy of nurturance and love. As these children grow up, they develop a pattern of feeling overly dependent and to be clingy, or overly independent and avoidant in close relationships (Cassidy & Berlin, 1994; Egeland & Sroufe, 1981; Finzi, Cohen, Sapir, & Weizman, 2000; Finzi, Ram, Har-Even, Shnit, & Weizman, 2001; Isabella, 1993; Kearns, Tomich, Aspelmeier, & Contreras, 2000; Main, 1989). The child's overly dependent or independent feelings tend to continue to persist into adulthood due to learned relationship expectations from caregivers, which may affect future relationship dyads.

Childhood Emotional Abuse

It is generally agreed upon that emotional abuse toward a child consists of behaviours representing isolating, corrupting, terrorizing, and denying emotional responsiveness (Burnett, 1993; Glaser, 2002; Hart et al., 1998). Furthermore, emotional abuse is the "sustained, repetitive, inappropriate emotional response to the child's experience of emotion and its accompanying expressive behaviour" (O'Hagan, 1995, p. 456). Emotional abuse includes repeated threats of violence (terrorizing), implementation of restrictions on social interactions (isolating), and modeling, permitting or encouraging antisocial behaviour (exploiting; Burnett, 1993; Glaser, 2002; Hart et al., 1998).

At the core of emotional abuse are repeated inappropriate emotional interactions between caregiver and child (O'Hagan, 1995). If a caregiver repeatedly responds inappropriately (e.g., anger) to a child's enthusiasms for accomplishments and successes,

the child will learn that expressing enthusiasm can be dangerous. The repetitiveness of inappropriate responses from caregivers is an important aspect of emotional abuse, and can be experienced as a form of emotional trauma. Every caregiver occasionally responds with an inappropriate emotional reaction to his or her child. It is whether or not the caregiver recognizes and feels bad for what they have done, and tries to do better next time that distinguishes non-emotionally abusive parents from emotionally abusive parents (O'Hagan, 1993; O'Hagan, 1995; Brassard, Hart, & Hardy, 1993).

Childhood Maltreatment and Eating Disorders

The current study is based on the premise that childhood psychological maltreatment is a precursor of body dissatisfaction; however, there is a paucity of research examining this association. Conversely, childhood physical and sexual abuse has been thoroughly researched and found to be a precursor of both body dissatisfaction and eating disorders. Because research has shown a high comorbidity between child psychological maltreatment and child physical and sexual abuse (Briere & Runtz, 1988, 1990; Claussen & Crittenden, 1991; Ney, Fung, & Wickett, 1994), the examination of the link between child physical and sexual abuse and eating disorders allows for a foundation toward the understanding of the association between psychological maltreatment and both eating disorders and body dissatisfaction.

Sexual Abuse and Eating Disorders. Empirical research examining the association between child sexual abuse and eating disorders has yielded inconsistent results. These discrepancies may be due to variations in methodology such as the type of sample used. For example, Wonderlich and his colleagues (2001) investigated the relation between sexual abuse and eating disorders in a sample of adult females with a history of sexual

abuse or rape, whereas Palmer and Oppenheimer (1992) investigated the relation between sexual abuse and eating disorders in a sample with eating disorder diagnoses.

Although an association between sexual abuse and eating disorders has been demonstrated (Kent, Waller, & Dagnan, 1999; Preti et al., 2006; Wonderlich et al., 1997; Wonderlich et al., 2001), sexual abuse may be more of a risk factor for psychopathology in general rather than a specific risk factor to eating disorders. Empirical research has demonstrated that rates of sexual abuse are similar between individuals with eating disorders and individuals with other types of pathology suggesting sexual abuse to not have a unique effect on body dissatisfaction compared to other psychopathology (Casper & Lyubomirsky, 1997; Finn, Hartman, Leon, & Lawson, 1986; Folsom, Krahn, Canum, Gold, & Silk, 1993; Palmer & Oppenheimer, 1992; Pope & Hudson, 1992; Steiger & Zanko, 1990).

Wonderlich and his colleagues (2001) have demonstrated a significantly greater association between childhood sexual abuse and eating disturbance in a sample of adult females with a history of child sexual abuse (CSA) and females with a history of child sexual abuse and rape (CSAR; experienced at age ≥ 18 years) compared to a community control group (CON). Eating disturbance refers to symptoms associated with eating disorders such as excessive dieting or exercise rather than a clinical diagnosis of a specific eating disorder. Females who had experiences of childhood sexual abuse or rape were recruited from clinical centers specializing in trauma-related treatment, and advertisements in local newspapers. Anorexia nervosa was associated with group CSAR, and binge eating disorder was associated with groups CSA and CSAR. Thus, the findings

of this study support the proposition that childhood sexual abuse increases the risk of developing disordered eating.

Similarly, other empirical studies have reported a significant association between childhood sexual abuse and eating disturbance (e.g., Leonard, Steiger, & Kao, 2003; Preti et al., 2006; Treuer et al., 2005; Wonderlich et al., 2000). When studies compare the effects of childhood sexual abuse to both eating disturbance and other psychiatric disorders, sexual abuse becomes a non-specific risk factor for all the psychiatric disorders examined (Pope & Hudson, 1992).

One study by Palmer and Oppenheimer (1992) examined whether a group of 158 women with eating disorders recalled more childhood sexual experiences with adults compared to a group of 115 women with other psychiatric diagnoses (affective disorder, neurotic disorder, schizophrenia, personality disorder, sexual dysfunction, and other diagnoses). Childhood sexual experiences were measured through a self-report questionnaire. A female investigator interviewed each participant in order to clarify responses on the self-report questionnaire. The results indicated a higher prevalence of unwanted childhood sexual experiences in the other psychiatric diagnoses group compared to the eating disordered group. Thus, the findings of this study did not support the notion that childhood sexual experiences are related to eating disorders to a greater extent than are other psychiatric disorders.

Physical Abuse and Eating Disorders. The association between child physical abuse and eating disorders has yielded findings similar to that of child sexual abuse and eating disorders. Empirical research consistently demonstrates a significant positive association between childhood physical abuse and eating disturbance (Grilo & Masheb,

2000; Kent et al., 1999; Kong & Bernstein, 2009; Leonard et al., 2003; Rorty, Yager, & Rossotto, 1994; Treuer et al., 2005); however, research does not demonstrate a specific association between physical abuse and eating disorders compared to the association between physical abuse and other psychiatric disorders (Folsom et al., 1993).

A study conducted by Treuer and his colleagues (2005) investigated whether physical abuse was more prevalent than sexual abuse in a sample of 63 inpatients with eating disorders. There was a prevalence rate of 57% for physical abuse compared to a prevalence rate of 29% for sexual abuse. The results indicated that physical abuse was the most frequent in the binge eating/purging type of anorexia nervosa and was related to increased body image distortion and increased laxative use than was sexual abuse. In addition, the presence of sexual abuse was not associated with severe body image distortions. Thus, this study demonstrated that body image distortions were more frequent in victims of physical abuse compared to victims of sexual abuse in a sample with eating disorders.

To add to the lack of clarity about the link between various abuse types and eating disorders, one study by Folsom et al (1993) investigated the impact of sexual and physical abuse on both eating disordered and psychiatric symptoms. The sample consisted of female patients with anorexia nervosa ($N = 15$), bulimia nervosa ($N = 57$), bulimia and anorexia nervosa ($N = 21$), eating disorder not otherwise specified ($N = 9$) and female inpatients ($N = 49$) who were admitted into a university adult psychiatric unit for a variety of disorders from affective to personality disorders. Sexual abuse was measured using the Sexual Life Events Questionnaire (SLE; Finkelhor, 1979) which was designed to collect information on a broad range of sexual experiences, and physical

abuse was measured by asking participants, “Everyone gets in conflicts with other people and sometimes these lead to physical blows such as hitting really hard, kicking, punching, stabbing, throwing someone down, etc. Try to remember these events for a year when you were around 12.” Events were considered physical abuse if they were perpetrated by the patient’s primary caregiver. Chi square analyses indicated no difference in reported sexual abuse or physical abuse between the eating disorder and psychiatric disorder groups. Furthermore, ANOVAs indicated that there was no main effect for sexual or physical abuse across subject groups on eating pathology measured by the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983). Sexual abuse but not physical abuse was found to be significantly associated with obsessive compulsiveness and phobic anxiety as measured by the Symptom Checklist 90 – Revised (SCL-90-R; Derogatis, 1983). In conclusion, these results do not support the hypothesis that physical or sexual abuse occurs more frequently in eating disordered inpatients than they do general psychiatric patients.

Psychological Maltreatment and Eating Disorders. Research on sexual and physical abuse and eating disorders has consistently yielded results suggesting that they are both general risk factors for psychopathology rather than a specific risk factor for eating disorders (Folsom et al., 1993). Recall the suggestion that the emotional trauma or psychological maltreatment associated with abuse and neglect may be the main damaging factor. Because recent research has demonstrated psychological maltreatment to be a stronger predictor of eating pathology, it is possible that the psychological maltreatment associated with both sexual and physical abuse is a more specific risk factor for the development of eating disorders than the acts of either sexual or physical abuse per se.

Rorty, Yager, and Rossotto (1994) examined rates of childhood sexual, physical, and psychological maltreatment in 40 females who had recovered from bulimia nervosa for a minimum of one year, 40 females who currently had bulimia nervosa, and 40 females who reported no eating disorder. Females with current bulimia nervosa reported higher levels of childhood physical, psychological, and multiple abuses compared to the other two groups. Rates of sexual abuse did not differ significantly between the three groups.

Similar results were found by Kent and colleagues (1999) who investigated the association between various forms of childhood trauma and eating disordered attitudes and behaviours in a sample of 236 female undergraduate students. Depression, anxiety, and dissociation were included as potential mediators. The Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995) was used to measure childhood abuse and the EDI was used to measure eating disorder pathology. Emotional abuse, physical abuse, and neglect all were found to be associated with the EDI total score, but sexual abuse was not. The combination of emotional abuse and physical abuse accounted for the majority of the 15.4% of the variance in the prediction of depression. Emotional abuse also was significantly associated with dissociation and was the most reliable predictor of eating pathology. Thus, emotional abuse was used for the subsequent mediation analysis, which showed anxiety and dissociation to be mediators for the association between emotional abuse and eating psychopathology. Relevant to the current study, Kent and colleagues (1999) demonstrated emotional abuse to have the greatest positive association to eating psychopathology compared to physical and sexual abuse, as well as neglect.

The association between physical abuse and eating pathology illustrated in the two aforementioned studies may not be caused specifically by the trauma associated with physical abuse. Research conducted by Claussen and Crittenden (1991) as well as Briere and Runtz (1988) has demonstrated that physical abuse and emotional abuse often occur together. It is possible that the negative effects of physical abuse on eating pathology were due to the co-occurrence of emotional abuse, rather than specifically from physical abuse (Gross & Keller, 1992).

A more recent study conducted by Hund and Espelage (2006) examined the associations among child emotional abuse, alexithymia, general distress, and disordered eating using structural equation modeling. Five hundred and eighty-eight female undergraduate students completed the Childhood Trauma Questionnaire Short Form (CTQ-SF; Bernstein et al., 2003) and the CATS to assess for emotional abuse. Disordered eating was measured using the EDI and the Eating Attitudes Test-26 (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982, Garner & Garfinkel, 1979). The results showed alexithymia and general distress to mediate the association between child emotional abuse and disordered eating behaviours and attitudes. Furthermore, restrictive eating behaviours and attitudes mediated the association between general distress and bulimic behaviours. This study illustrates the complex association between childhood emotional abuse and disordered eating, and various mechanisms that contribute to this association, highlighting the need for further investigation.

Body Image

Body image is conceptualized as a multidimensional construct consisting of the perceptual, behavioural, and attitudinal experiences of appearance (Thompson, Heinberg,

Altabe, & Tantleff-Dunn, 1999). The perceptual component of body image refers to the ability to estimate body size. The behavioural component includes the avoidance of certain situations where body image can be subject to reproach and ritualistic acts such as frequent checking and fixing of one's appearance. Finally, the attitudinal component includes two conceptually distinct facets: evaluation or satisfaction with the body, especially physical appearance; and investment consisting of cognitive appraisals about the body and the importance of these appraisals (Cash, Melnyk, & Hrabosky, 2004; Cash, Theriault, & Annis, 2004, Thompson et al., 1999).

The current study will focus on the attitudinal-evaluative (satisfaction with the body) facet of body image because research has found high levels of body dissatisfaction to be related to the development of eating pathology (Goldfein, Walsh, & Midlarsky, 2000; Stice, 2002; Stice & Shaw, 2002). Recent research by Dunkley and his colleagues (2010) has demonstrated a positive association between emotional abuse and body dissatisfaction, and evidence suggests that body dissatisfaction predicts eating pathology. Because body dissatisfaction predicts eating pathology, identifying mechanisms that can reduce the negative effect of emotional abuse is important.

Childhood Maltreatment and Body Dissatisfaction

Although there is a limited amount of research examining the association between child psychological maltreatment and body dissatisfaction, this association should be reviewed before the effects of other constructs within this association can be understood. The association between the different forms of childhood maltreatment (sexual, physical, psychological) and body dissatisfaction also will be discussed. In addition, body dissatisfaction in relation to sexual and physical abuse will be reviewed because of the

high co-occurrence between psychological maltreatment and sexual and physical abuse, which may be the result of underlying psychological trauma associated with sexual and physical abuse.

Sexual Abuse, Physical Abuse and Body Dissatisfaction. The empirical literature on the effects of sexual abuse and physical abuse on body dissatisfaction reveals mixed findings. Although the majority of studies reviewed suggest more body dissatisfaction in individuals who have experienced childhood sexual abuse or physical abuse (Dunkley et al., 2010; Preti et al., 2006; Wonderlich et al., 2000; Wonderlich et al., 2001), there remains a body of literature that suggests no association between either types of abuse and body dissatisfaction (Grilo & Masheb, 2001; Kent et al., 1999).

One study conducted by Grilo and Masheb (2001) found no association between sexual abuse or physical abuse and body dissatisfaction. A sample of 145 adult male and female outpatients diagnosed with binge eating disorder completed the CTQ-SF to measure abuse and the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) to measure body dissatisfaction. The results showed no association between sexual or physical abuse and body dissatisfaction in females, but a positive association was found between sexual abuse and body dissatisfaction in males. In this study emotional abuse was found to be positively associated with both body weight and shape concern, in addition to being positively associated with more depression, and lower self-esteem in both males and females. A limitation to this study was the use of a sample with only binge eating disorder and the absence of a comparison group, which limits the generalizability and interpretability of the results.

Contrary to the findings by Grilo and Masheb (2001), Wonderlich and colleagues (2001) found sexual abuse was associated with body dissatisfaction. Wonderlich et al. (2001) examined the association between childhood sexual abuse and body dissatisfaction and eating disturbance in children and adolescents between 10 and 15 years of age. This study included a group of 20 children with reports of sexual abuse, and a comparison group of 20 children with no reports of sexual abuse. The CTQ-SF was used to assess childhood abuse, the Body Ratings Scale for Adolescents (BRS; Sherman, Iacono, & Donnelly, 1995) was used to assess body dissatisfaction, and the Kids' Eating Disorders Survey (KEDS; Childress, Jarrell, & Brewerton, 1993) was used to assess the presence of eating disorder symptoms. Weight dissatisfaction was significantly higher in the sexually abused group than in the control group. In addition, the sexually abused group was found to increase food restriction when emotionally upset, to pursue thin body ideals, and to engage in purging behaviours to a greater extent than did the non-sexually abused group. However, the study by Wonderlich and colleagues (2001) examined an adolescent sample with no prior eating disorder diagnosis, which differed from that of Grilo and Masheb (2001) who studied an adult sample with binge eating disorder.

Psychological Maltreatment and Body Dissatisfaction. More recent literature has begun to examine the association between psychological maltreatment and body dissatisfaction. Unlike physical and sexual abuse, psychological maltreatment consistently is associated with body dissatisfaction in a variety of samples. In addition, several studies have demonstrated psychological maltreatment to be a stronger predictor of body dissatisfaction than either sexual or physical abuse (Kent et al., 1999; Dunkley et al., 2010; Kennedy et al., 2007).

One of the most recent studies by Dunkley and his colleagues (2010) examined the mediating role of self-criticism in the relation between childhood maltreatment and both depressive symptoms and body dissatisfaction in 170 patients (132 female) with binge eating disorder. Participants completed the CTQ-SF and BSQ to measure childhood abuse and body dissatisfaction, respectively. Self-esteem also was assessed to be included as a covariate to rule out the possibility of low self-esteem associated with self-criticism to act as the mediating variable between child maltreatment and body dissatisfaction. Correlational analyses indicated both emotional ($r = .19, p < .05$) and sexual abuse ($r = .18, p < .05$) to have a significant positive association with body dissatisfaction. Because emotional abuse had the strongest association with body dissatisfaction it was used as the predictor variable in the path analysis to determine if self-criticism mediated the relation between emotional abuse and body dissatisfaction.

Several empirical studies examined the link between child psychological maltreatment and disordered eating and also examined the impact of the former on body dissatisfaction. One study by Kent and colleagues (1999) investigated the relation between the various forms of childhood abuse and disordered eating in 236 female undergraduate students. Child maltreatment was measured using the CATS and disordered eating was measured using the EDI. Because the EDI yields a body dissatisfaction subscale, the correlation between emotional abuse and body dissatisfaction also was determined. The results showed physical abuse ($r = .202, p < .01$), neglect ($r = .178, p < .01$), and emotional abuse to be associated with body dissatisfaction, with emotional abuse having the highest correlation ($r = .236, p < .001$).

Similarly, Kennedy and colleagues (2007) administered the CATS and Eating Disorder Inventory-2 (EDI-2; Garner, 1991) to 1,283 undergraduate students to investigate the relation between child emotional abuse and disordered eating. The EDI-2 also yields a body dissatisfaction subscale which was correlated with the CATS subscales. All CATS subscales (physical abuse, sexual abuse, punishment, neglect, and emotional abuse) were significantly correlated with body dissatisfaction, with emotional abuse having the highest correlation ($r = .21, p < .001$), followed by neglect ($r = .19, p < .001$). The results to this study also demonstrated the mediating effect of self-esteem and anxiety in the relation between both sexual and emotional abuse and disordered eating. Because recent research has consistently demonstrated psychological maltreatment to be a stronger predictor of body dissatisfaction compared to physical and sexual abuse (Kennedy et al., 2007; Dunkley et al., 2010), it is suggested that psychological maltreatment is one of the underlying construct that negatively impacts body satisfaction, in turn increasing the risk for developing eating disorders.

Attachment Theory

In the present study, adult attachment style is conceptualized as a mediating variable between child psychological maltreatment and body dissatisfaction, and as having a direct effect on perceived social support. The effect of adult attachment style on both perceived social support and body dissatisfaction are based on attachment theory as described below.

The basic tenet of attachment theory emphasizes the bond and relationship that develop between the child and caregiver (Bowlby, 1982). According to Bowlby, both child and parent engage in an instinctual reciprocal relationship where the child's primary

attachment behaviour is organized around maintaining proximity to the parent, and the parent's primary attachment behaviour is organized around providing care, proximity, and protection for the child to ensure its survival (George, 1996). The development of attachment style to a caregiver becomes an important part of a child's early development by shaping both a child's cognitive and emotional representations about the self and others. According to Bowlby (1982, 1988), these representations of the self and others form an Internal Working Model (IWM) of attachment. A child's IWM is constructed from early attachment experiences, and is used to guide perceptions and appraisals of attachment related information from future relationships. IWMs serve as a basis for developing expectations of the self as worthy of care and protection and others as available and reliable sources of care and protection (Ainsworth & Bowlby, 1991; George, 1996; Main, 2000).

When primary caregivers are responsive and loving in a consistent manner, the child develops representations of the self as worthy of love and attention, and representations of others as reliable sources of support and affection. On the other hand, experiences of parental maltreatment can lead to the development of the self as unworthy of love and attention, and of others as unreliable sources of support and affection (Wright, Crawford, & Del Castillo, 2009).

The early expectations that infants develop from patterns of repeated interactions with their caregiver influence the development of certain attachment security types. In addition, the quality of early attachment relationships is influenced by the degree to which the infant has come to rely on the caregiver as a source of care and security.

Adult Attachment Security

Extending from Bowlby's work on the IWM of attachment, Griffin and Bartholomew (1994) proposed a two-category model of attachment that supports Bowlby's theory of the IWM of the self and other for adults. The model-of-self construct as measured by the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994) is the degree to which individuals have developed IWMs of the self as worthy of care and support from others, and influences experiences of anxiety and dependence in close relationships.

The model-of-other construct as measured by the RSQ is the degree to which individuals expect others to be a reliable source of support. This model influences their tendency to seek or avoid close relationships (Griffin & Bartholomew, 1994). Thus, the model-of-self can be conceptualized on a continuum of anxiety related to the self, and the model-of-other can be conceptualized on a continuum of avoidance of others.

The two-dimensional model can be broken down into a four-dimensional model of adult attachment that can be conceptualized as a combination of the degree of positivity about the self and about others (Bartholomew, 1990; Bartholomew & Horowitz, 1991). The four adult attachment styles are secure, preoccupied, dismissing, and fearful (see Figure 1; Bartholomew & Horowitz, 1991). Each of the four dimensions of adult attachment security reflects a general strategy to regulate feelings of security in close relationships based on the degree of anxiety and avoidance that is experienced in relationships. Individuals with a secure or dismissing attachment styles have positive self-models, resulting in more competence and feelings of worth. Unlike secure individuals, dismissing individuals have internalized negative models of others, resulting in denial of the importance of close relationships, and relying on a pattern of independence and self-

reliance. Individuals with a preoccupied or a fearful attachment style have negative internalized models of the self that lead them to feel less self-worth. Because preoccupied individuals also have a positive model of others, they tend to seek proximity to others when distressed. On the other hand, fearful individuals have a negative model of others and expect others to be an unreliable source of support when distressed and thus, are less likely to seek proximity to others. According to the four-category model, a negative model-of-self would indicate either a preoccupied or fearful attachment style, and a negative model-of-other would indicate either a dismissing or fearful attachment style. These forms of attachment style are considered to be a type of insecure attachment style.

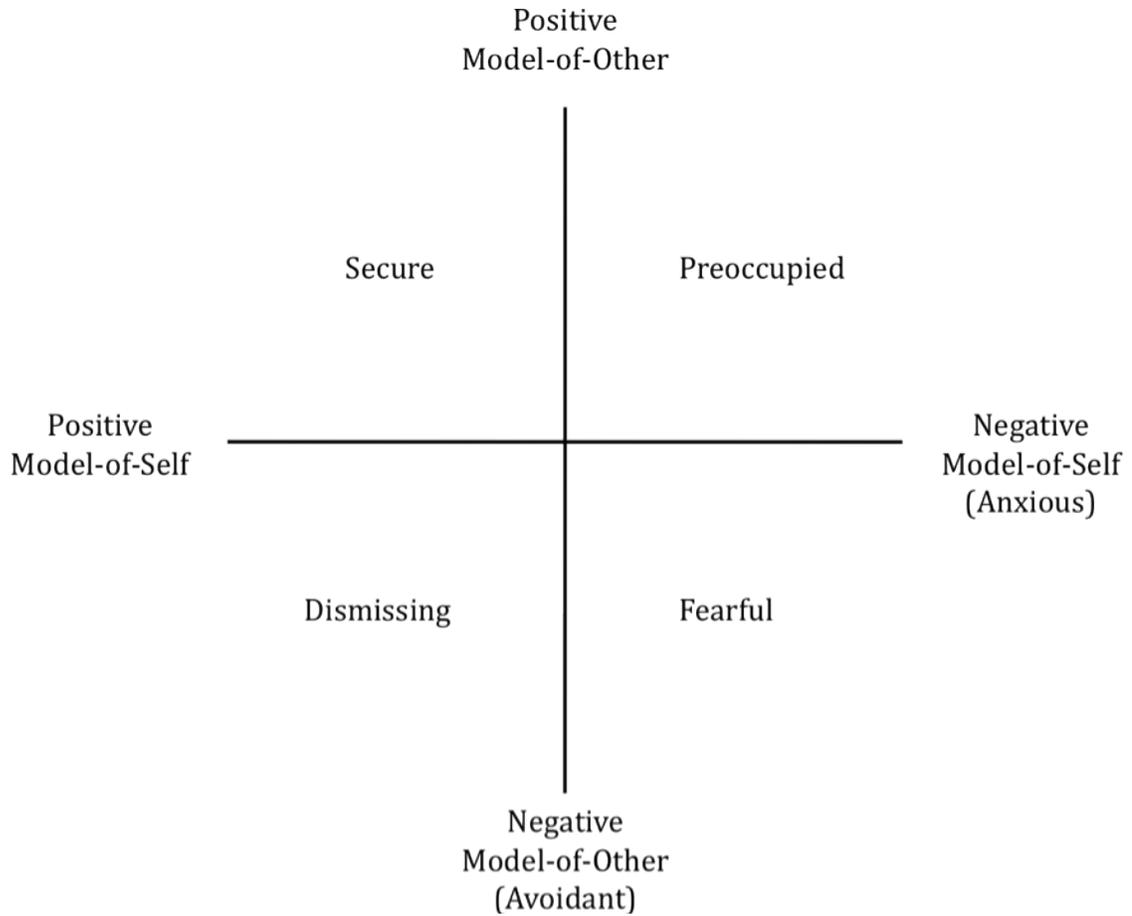


Figure 1. Four-category model of adult attachment (Griffin & Bartholomew, 1994)

The four categories of adult attachment are composed of a combination of both the degree of positivity or negativity of the model-of-self and the positivity or negativity of the model-of-other. The model-of-self is the degree to which individuals believe they are worthy of care and support from others. The model-of-other is the degree to which individuals expect others to be available and supportive. Moreover, attachment security can be broken down into the dimensions of avoidance and anxiety in interpersonal relationships.

Mediators between Childhood Psychological Maltreatment and Body Dissatisfaction

Research supports a connection between childhood psychological maltreatment and body dissatisfaction (Dunkley et al., 2010); however, the mechanisms that affect this link remain unclear. Although there is a paucity of research examining the relation between child psychological maltreatment and body dissatisfaction, the existing literature shows a well-supported link between child psychological maltreatment and eating disorders. This link is important because body dissatisfaction is one of the causal mechanisms to the development of eating disorders.

Child psychological maltreatment also has been associated with the development of an insecure attachment style (Allen, 2001), but has yet to be linked to Bartholomew's model-of-self and model-of-other. Research suggests that child psychological maltreatment is associated with both an avoidant and anxious attachment style (Baer & Daly Martinez, 2006), which corresponds theoretically with Bartholomew's negative model-of-self and a negative model-of-others.

The development of a negative model-of-self and negative model-of-other during childhood influences perceptions of the availability and reliability of social support and the likelihood of seeking social support resources (McLewin & Muller, 2006; Vogel & Wei, 2005). Specifically, a negative model-of-self can lead to feelings of not being worthy of social support from others and a negative model-of-others can lead to the perception that others are an unreliable and unavailable source of social support.

Both an insecure and preoccupied attachment style has been shown to be positively associated with body dissatisfaction (Cash et al., 2004). According to Bartholomew's four-category model of adult attachment (see Figure 1), an insecure and

preoccupied attachment style correspond to a negative model of the self. This finding suggests that the model-of-self dimension is associated with body dissatisfaction.

Research has shown that deficits in the perception of social support resources can be affected by are associated with body dissatisfaction, dieting, and bulimic symptoms (Stice et al., 2001). Because an insecure attachment is associated with less perceived social support, and deficits in social support are related to body dissatisfaction, the current study included these variables as potential mediating mechanisms between child psychological maltreatment and body dissatisfaction. In addition, because perceptions of social support have been linked to various forms of child maltreatment (Stice et al., 2001), the current models will postulate the existence of a link between child psychological maltreatment and perceived social support. The following sections will review the literature supporting the inclusion of the proposed variables as possible mediators of the relation between child psychological maltreatment and adult body dissatisfaction.

Childhood Psychological Maltreatment and Adult Attachment Style

Psychological maltreatment has a negative impact on attachment security through experiences of attachment trauma (Courtois et al., 2009). More specifically, attachment trauma results from experiences of emotional abuse and neglect (Courtois et al., 2009). In the presence of emotionally responsive and loving caregivers, children are able to form general expectations of caregivers as a reliable source of support resulting in a secure attachment style. Conversely, experiences of emotional unresponsiveness (emotional neglect) and verbal assaults on self-worth (emotional abuse) can lead to the development of general expectations of caregivers as unreliable and perhaps even a dangerous source

of support, resulting in an insecure attachment. Experiences of psychological maltreatment lead children to seek and require protection from their caregiver rather than seek support and comfort from them (Allen, 2001). Thus, experiences of childhood attachment trauma can impair the ability to form stable and trusting relationships in adulthood (Allen, 2001; Allen, 2008), increasing the risk of developing a negative model-of-self and/or negative model-of-other.

Main (1989) proposed that when infants don't receive reliable parental protection, they develop secondary attachment strategies to cope with periods of separation from caregivers. These secondary attachment strategies include the development of an anxious or an avoidant attachment style (see Figure 1). Repeated experiences of caregiver unresponsiveness lead to the development of attachment related trauma resulting in avoidant and anxious behaviours in infants. Maltreated infants' IWM is such that they view themselves as unworthy of care resulting in anxiety, and model-of-other as unresponsive sources of support resulting in avoidance. Avoidant behaviours are used as a defense mechanism to lessen the impact of prolonged unresponsiveness to attachment needs, and anxious behaviours increase sensitivity to experiences of separation, resulting in an attempt to maximize closeness with caregivers (Finzi, Cohen, Sapir, & Weizman, 2000; George 1996).

Research shows differential effects of child abuse and neglect on attachment security (Baer & Daly Martinez, 2006). Physical abuse and sexual abuse are associated with both an anxious and avoidant attachment style and neglect is associated with an anxious attachment style (Egeland & Sroufe, 1981; Finzi et al., 2000; Finzi et al., 2001). When other forms of maltreatment are considered (physical and sexual abuse, and

physical neglect), emotional abuse uniquely predicted an anxious adult attachment style, and both emotional abuse and emotional neglect predicted an avoidant attachment style (Riggs & Kaminski, 2010; Riggs 2010). These findings suggest that child emotional maltreatment adds additional risk to developing insecure attachment outcomes, when compared to other forms of child maltreatment.

Adult Attachment Style and Eating Disorders

Currently, there is a paucity of research examining the connection between attachment style and body dissatisfaction, but a body of research has demonstrated a relation between attachment styles and eating disorders (Zachrisson & Skarderud, 2010). Because body dissatisfaction predicts disordered eating, evidence linking attachment style and eating disorders will be reviewed.

In a sample of 329 male and female undergraduate students, Elgin and Pritchard (2006) found secure attachments in males to have a significant negative association with drive for thinness, bulimic symptoms, and body dissatisfaction, whereas secure attachments in females resulted in a significant negative association with body dissatisfaction. In addition, a fearful attachment style in females was positively associated with bulimic symptoms.

More specific to the current study, Suldo and Sandberg (2000) investigated the relation between Bartholomew's four-category model of attachment using the RSQ (Griffin & Bartholomew, 1994) and disordered eating symptomatology in a sample of 169 college females using multivariate multiple linear regression analysis. The four attachment patterns (secure, preoccupied, fearful, dismissing) were used as predictors of disordered eating scores. A preoccupied attachment style was significantly associated

with drive for thinness and bulimic symptoms, and a dismissing attachment style was significantly associated with body dissatisfaction. Similarly, Friedberg and Lyddon (1996) used Bartholomew's model of adult attachment security to predict group membership into a disordered eating group or a control group. The results showed the preoccupied and secure attachment styles predicted group membership into the eating disordered, and non-eating disordered groups, respectively.

In a sample of 25 female anorexia nervosa patients, 33 female bulimia nervosa patients, and 23 females with no psychiatric or physical illness, Latzer and colleagues (2002) found an avoidant attachment style to be most prevalent in both the anorexia nervosa (50%) and bulimia nervosa (61.5%) groups. A secure attachment was most prevalent in the control group (75%) compared to both the anorexia nervosa group (14.3%) and the bulimia nervosa group (30.8%). Thus, the aforementioned body of literature suggests that secure, dismissing and preoccupied attachment styles are associated with eating disorder symptomatology. Specifically, a secure attachment is negatively associated with eating disorders, and a preoccupied and dismissing attachment are positively associated with eating disorders.

Adult Attachment Style and Body Dissatisfaction

Although limited, evidence suggests that the development of an insecure attachment style is positively related to body dissatisfaction in both eating disordered and non-eating disordered populations (Bosmans, Goossens, & Braet, 2009; Elgin & Pritchard, 2006; Sharpe et al., 1998; Troisi et al., 2006; Zachrisson & Skarderud, 2010). In addition, research indicates that an insecure attachment is related to factors that are highly correlated with body dissatisfaction such as anxiety, self-esteem, and depression

(Corte & Stein, 2005; Kayem Bulik, Thornton, Barbarich, & Masters, 2004; Stafford, Alloy, Crossfield, Morocoo, & Wang, 2004).

Troisi and colleagues (2006) examined the relation between attachment and body dissatisfaction in 31 women with anorexia nervosa and 65 women with bulimia nervosa. In both anorexic and bulimic women, body dissatisfaction was strongly positively correlated with attachment insecurity and separation anxiety. Similar results were found in a sample of 305 female elementary and middle school students in a study conducted by Sharpe and her colleagues (1996), where an insecure attachment style was positively related to weight concerns and lower self-esteem.

After reviewing the literature, only one study that examined the relation between body image and attachment security using the RSQ was found. Cash, Theriault, and Annis (2004) conducted a study including a sample of 103 males and 125 female university students completed the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mukulka, 1990) to measure body dissatisfaction, and the RSQ to measure adult attachment style. For both genders, correlations indicated a more secure attachment was related to more body satisfaction (male, $r = .286, p < .01$; female, $r = .205, p < .05$). An even stronger negative correlation was found between a preoccupied attachment style and body satisfaction for both genders (male, $r = -.478, p < .001$; female, $r = -.205, p < .01$). In sum, the reviewed literature suggests a preoccupied attachment style to have the strongest and most frequent association with body dissatisfaction.

Childhood Maltreatment, Adult Attachment Style, and Perceived Social Support

Although there is a dearth of research examining the associations between child maltreatment, perceived social support, and Bartholomew's two attachment dimensions,

several empirical studies suggest these constructs to be related with one another. Child maltreatment has been linked to both a negative model-of-self and negative model-of-other, as well as deficits in perceived social support (McLewin & Muller, 2006; Muller, Gragtmans, & Baker, 2008; Powers, Ressler, & Bradley, 2009).

Muller and his colleagues (2008) examined the mediating role of attachment style as measured by the RSQ, on the relation between childhood physical abuse and perceived social support in adulthood in a sample of 876 undergraduate university students (722 females, 204 males). The RSQ was used to measure adult attachment style. Correlational analyses indicated higher levels of physical abuse to be associated with a negative model-of-self ($r = -.12, p < .01$) and with a negative model-of-other ($r = -.10, p < .01$). In addition, higher levels of physical abuse were associated with less perceived social support from family and friends ($r = -.14, p < .01$), peers ($r = -.08, p < .05$), and authority figures ($r = -.08, p < .05$). Both the model-of-self and model-of-other were positively correlated with social support from family and friends, peers, and authority figures, with correlations ranging from $.13 - .31, p < .01$. This study supports the association between experiences of child physical abuse and both the RSQ model-of-self and model-of-other, and perceived social support; however, this study did not examine the effect of child psychological maltreatment on either the RSQ attachment dimensions or social support.

In an adult sample of 66 (24 males 42 females) abused individuals (physical, sexual, psychological), Muller and Lemieux (2000) examined the relations among attachment security, perceived social support, and psychopathology. An adaptation of the Norbeck Social Support Questionnaire (NSSQ; Norbeck, Lindsey, & Carrier, 1981, 1983) was used to measure perceived social support, the RSQ was used to measure adult

attachment style, and the Young Adult Self-Report (YASR; Witznitzer, Verhulst, van der Brink, Koeter, van der Ende, Giel, & Koot, 1992) was used to measure psychopathology. The results showed that, among those with low social support compared to those with high social support, a negative model-of-self had a significantly higher correlation with measures of internalizing psychopathology ($r = .61, p < .001$). A negative model-of-other was not significantly correlated with internalizing psychopathology ($r = .10$). In addition, a negative model-of-self ($r = .30, p < .05$), but not a negative model-of-other ($r = .06, p > .05$) was significantly correlated with lower perceptions of social support. This finding is important to the current study because body dissatisfaction is highly associated with internalizing psychopathology (i.e., depressive symptoms), and supports the pathway suggesting a link between the model-of-self and body dissatisfaction.

Individuals with a secure attachment style perceive and seek more social support than do insecure individuals (Lopez, Melendez, Sauer, Berger, & Wyssmann, 1998; Riggs, Jacobvitz, & Hazen, 2002). Using the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985/1996) Riggs and colleagues (2002) assessed the relation between attachment security and history of seeking psychotherapy. Individuals with a dismissing attachment style were less likely than individuals with a secure, preoccupied, or unresolved attachment style to have received individual or couples therapy. An unresolved attachment style is similar to a disorganized attachment style and is characterized by signs of mental disorganization when discussing experiences of loss or abuse during the AAI (Bailey, Moran, & Pederson, 2007). This finding is consistent with an attachment theory framework where dismissing individuals may be more reluctant to

seek therapy as a result of distrustful attitudes towards others and a model-of-self as independent.

Using a sample of 253 college students, Lopez et al. (1998) examined the relation between the self-and-other models of attachment and willingness to seek counseling for reported problems. The results of this study showed no difference in help-seeking attitudes between individuals with a positive other-model and negative-other model. But, when self-reported problems were high, individuals with a positive other-model were significantly more likely to seek counseling than individuals with a negative other-model. In addition, individuals with a positive model-of-self reported fewer personal problems than individuals with a negative model-of-self. Help-seeking attitudes between a positive and negative model-of-self were not reported.

In a sample of 335 college students, Vogel and Wei (2005) demonstrated that both preoccupied and dismissing attachment styles were associated with less perceived social support. An important difference between the two groups was that a preoccupied attachment style was positively associated with help seeking intentions, whereas a dismissing attachment style was negatively associated with help-seeking intentions. Individuals with a preoccupied attachment style also were more likely to acknowledge the presence of psychological distress compared to dismissing individuals, which may have been the fundamental difference in help seeking intentions.

The aforementioned studies demonstrate a negative link between attachment insecurity and perceptions of therapy as a support resource and therapeutic help-seeking behaviours. Because it is more common to seek social support from non-professionals

instead of professional psychotherapists, perceived social support from peers, family members, and significant others will be measured and included in the current study.

Childhood Maltreatment, Perceived Social Support, and Body Dissatisfaction

Perceived social support resources are positively related to psychological well-being (Cohen & Willis, 1985; Liang, Krause, & Bennett, 2001; Chu, Saucier, & Hafner, 2010), due to concomitant positive emotions and self-worth. Furthermore, social support functions as a protective factor against stress by reinforcing self-esteem, self-efficacy, and problem solving behaviours (Cohen & Willis, 1985). Empirical research examining social support in adults shows that *perceived* social support is the best predictor of psychological well-being, whereas the size of social support networks and actual support received were unrelated to psychological well-being (Cohen & Willis, 1985). Victims of childhood maltreatment can create an environment that challenges previous experiences of trauma through supportive adult relationships. These supportive adult relationships can increase an individual's resilience and help them cope with previous experiences of abuse, decreasing the likelihood of developing psychopathology (McLewin & Muller, 2006).

Perceived social support is linked to better psychological functioning in adults who have experienced child abuse (Muller & Lemieux, 2000; Runtz & Schallow, 1997). One study by Runtz and Schallow (1997) examined perceived social support among 302 undergraduate students who had experienced physical or sexual abuse. The Provisions of Social Relations Questionnaire (PSR; Turner, Frankel, & Levin, 1983) was used to assess perceived social support from family and friends. Social support and coping were included as possible mediators between child maltreatment and adult psychological

adjustment. The effects of childhood abuse on adult adjustment were almost entirely mediated by social support and coping. In addition, social support accounted for 55% of the variance in adaptive functioning for individuals who experienced physical or sexual abuse, yet 90% of the variance of social support was attributable to other factors.

The findings from Runtz and Schallow (1997) emphasize the importance of identifying variables that influence social support given its profound impact on psychological adjustment. Because social support is important for mitigating experiences of child maltreatment, identifying variables that influence social support can provide a protective factor to reduce body dissatisfaction in those who have been abused. In addition, it is important to understand the mechanisms that create experiences of positive social support (e.g., positive model-of-others).

Stice, Spangler, and Agras (2001) tested whether long-term exposure to thin-ideal images would result in lasting increases in body dissatisfaction and negative affect. The researchers also investigated whether exposure to thin-ideal images would result in greater thin-ideal internalization, dieting, and bulimic symptoms. One of the aims was to investigate whether certain factors would potentiate or mitigate the negative effects of exposure to thin-ideal images, including social support as a potential mitigating factor.

Two hundred and nineteen females between the ages of 13 and 17 years from two private high schools participated in this study. Increased exposure to thin-ideal images was found to have no main effects on thin-ideal internalization, body dissatisfaction, dieting, negative affect, or bulimic symptoms. However, evidence suggested that participants with initial elevations in pressure to be thin and body dissatisfaction, and deficits in social support were negatively affected by exposure to thin-ideal images. Moreover, adolescents

who reported increased body dissatisfaction, dieting, and bulimic symptoms also reported deficits in social support. These findings demonstrated that adolescents with low social support may be more susceptible to increased body dissatisfaction, dieting, and bulimic symptoms.

Depression, Psychological Maltreatment and Body Dissatisfaction

Depression was included as a covariate because research has supported a link among psychological maltreatment and body dissatisfaction; however research examining these associations have yielded inconsistent results (Holsen, Kraft, & Roysamb, 2001; Ohring, Graber, & Brooks-Gunn, 2002; Paxton, Eisenberg, & Neumark-Sztainer, 2006; Stice & Whitenton, 2002). In addition, research supports a positive link between psychological maltreatment and depression, which provides a rationale for allowing these two variables to correlate in the proposed models. This would allow the models to account for more variance and have improved the fit indices.

Paxton and her colleagues assessed prospective risk factors for body dissatisfaction, including body mass index, socioeconomic status, peer environment, and psychological factors (Time 1) in a cohort of early adolescent males ($N = 366$, mean age = 12.8) and females ($N = 440$, mean age = 12.7) and middle adolescent males ($N = 764$, mean age = 15.9) and females ($N = 946$, mean age = 15.8). Participants were re-assessed five-years later (Time 2). Predictors of Time 2 body dissatisfaction included Time 1 body dissatisfaction, body mass index, socioeconomic status, being African-American, friend dieting and teasing, self-esteem, and depression. Although the profile of body dissatisfaction predictors at Time 2 differed across samples, depression was a predictor of body dissatisfaction across all groups. Presnell, Bearman, and Stice (2004) echoed these

results after examining risk factors for body dissatisfaction using prospective data from 531 (males = 238, females = 293) adolescents. The results indicated that negative affect was found to increase body dissatisfaction in males but not in females.

Conversely, Stice and Whitenton (2002) found that depression did not predict increases in body dissatisfaction in a group of 496 adolescent females. However, elevated adiposity, perceived pressure to be thin, thin-ideal internalization, and social support deficits predicted increased body dissatisfaction. Similarly, Holsen and colleagues (2001) did not find depression to prospectively predict body dissatisfaction in a group of males ($N = 326$) and females ($N = 319$) across three time points (13-years old, 15-years old, 18-years old) over a five-year period; however, body dissatisfaction predicted depressed mood for both males and females, but only when the different time points were examined cross-sectionally. Thus, the results did not support the existence of a causal effect of body dissatisfaction on depression for either males or females over a five-year period.

A study conducted by Kasper (2001) examined the relation between self-esteem, mood, and body dissatisfaction in 105 undergraduate females. Participants were divided into moderate and high self-esteem groups (due to restricted variability in self-esteem scores), and randomly assigned to a dysphoric or neutral mood condition. The mood states were manipulated by having participants watch three-minute film segments that have been shown to reliably elicit certain mood states. BMI was a significant covariate in the analyses. The results indicated that compared to participants in the neutral condition, participants in the dysphoric mood condition showed higher body dissatisfaction and demonstrated wider discrepancies between estimates of their current and ideal body sizes, independent of self-esteem. Additionally, compared to participants in the high self-

esteem group, participants in the low self-esteem group were more likely to have higher body dissatisfaction and demonstrated wider discrepancies between estimates of their current and ideal body sizes independent of mood.

Kostanski and Gullone (1998) examined the relation between body dissatisfaction and self-esteem, anxiety, and depression, while controlling for BMI, in a sample of 516 adolescent males and females (268 females, 248 males). The results indicated perceived body image dissatisfaction was associated with lower self-esteem ($r = -.41, p < .01$), higher depressive symptoms ($r = .34, p < .01$), and higher anxiety symptoms ($r = .36, p < .01$).

Depression has been shown to be associated with more experiences of psychological maltreatment (Allen, 2008; Kelly, Warner, Trahan, & Miscavage, 2009). Kelly and colleagues (2009) examined the level of psychological maltreatment and depression in 100 women from the community who were involved in intimate relationships with men. A significant positive correlation was found between psychological maltreatment and depression ($r = .36, p < .01$). Although a significant association was found between psychological maltreatment and depression, this study measured reported psychological abuse from current intimate partners rather than from childhood, which differs from the current study that examined childhood psychological abuse.

Allen (2008) conducted a study to determine the association between childhood experiences of psychological maltreatment and adult emotional adjustment in a sample of 256 university students. This study found various forms of psychological maltreatment (e.g., terrorizing, isolating, degradation, witnessing family violence) to be associated with

depression ($r = .18 - .29, p < .01$) as well as somatic complaints ($r = .19 - .31, p < .01$), anxiety ($r = .17 - .28, p < .01$), and borderline personality features ($r = .20 - .29, p < .01$). Thus, the findings from this study support the inclusion of a depression variable to account for variance and improve model fit in the proposed models.

Present Study

The research reviewed provides evidence for associations between childhood psychological maltreatment, the model-of-self, the model-of-other, perceived social support, depression, and body dissatisfaction. Child psychological maltreatment is positively associated with adult body dissatisfaction, and previous research suggests attachment style and perceived social support to act as mediating mechanisms between child psychological maltreatment and body dissatisfaction. Experiences of child psychological maltreatment are linked to the development of either a preoccupied or dismissing attachment style, and a negative model-of-self and-other. Individuals who develop a negative model-of-self have been shown to develop more body dissatisfaction and a deficit in perceived levels social support. Individuals who develop a negative model-of-other have been shown to have a deficit in perceived levels of social support and have increased body dissatisfaction. In sum, more child psychological maltreatment is related to an insecure attachment style, an insecure attachment is linked to deficits in social support, and deficits in social support are linked to more body dissatisfaction. Thus, the associations among the proposed constructs support the development and testing of model 1 and model 2 and will help clarify the relations among the proposed constructs.

Runtz and Schallow (1997) found that perceived social support accounted for 55% of the variance in adaptive functioning in adults who experienced sexual or physical abuse, yet 90% of the variance in social support was not accounted for in their model, suggesting the existence of another variable that affects the relation between abuse and adaptive functioning. The current study extended on the findings by Runtz and Schallow (1997) and examined the relation between psychological maltreatment and body dissatisfaction rather than the relation between sexual and physical abuse and adaptive functioning. The proposed models suggest attachment style to account for some of the variance in perceived social support that was not accounted for by abuse in Runtz and Schallow's (1997) study.

The present study improved upon previous studies in several ways. Studies investigating child maltreatment, body dissatisfaction, and eating disorders have obscured findings on this relation by using unequal gender ratio comparison groups (Pope & Hudson, 1992). Because the manifestations of body dissatisfaction vary for males and females, the present study examined only females in relation to child psychological maltreatment and body dissatisfaction. Females were studied rather than males because society places greater pressure on females to fit the thin ideal, and rates of eating disorders are more prevalent for females (Thompson et al., 1999). In addition, females have a tendency to want to model a thin body ideal, whereas males have a tendency to model a muscular body ideal, suggesting the meaning of body dissatisfaction differs between genders (Thompson et al., 1999). Thus, limiting the sample to only females ensured a unified conceptualization of body dissatisfaction.

Existing research has examined social support from friends and family members, or a therapist. The present study examined perceived social support from friends, family members, and significant others which represent more typical sources of social support. In addition, the measure of these social support resources is more representative of actual support received by most individuals across development from a child to early adulthood.

A major strength of the present study was the examination of mediators between childhood maltreatment and body dissatisfaction rather than mediators between childhood maltreatment and disordered eating (e.g., Kennedy et al., 2007). The identification of mechanisms that affect body dissatisfaction is important because it is the primary motivator of eating pathology. This may allow for primary prevention of eating pathology and by alleviating factors that affect the development of body dissatisfaction.

Hypotheses

Model 1 (Figure 2) hypothesized the association between childhood psychological maltreatment and body dissatisfaction to be mediated by the model-of-self, the model-of-other, and perceived social support. This model included pathways from psychological maltreatment to body dissatisfaction, the model-of-other, the model-of-self, and perceived social support. In addition, pathways were included from both the model-of-self and model-of-other to perceived social support, and from perceived social support to body dissatisfaction. Finally, a pathway was included from depression to body dissatisfaction, and a covariate was added between depression psychological maltreatment.

Model 1 was based on the following hypotheses: 1. psychological maltreatment will be positively related with body dissatisfaction; 2. psychological maltreatment will be

negatively related with the model-of-self and model-of-other; 3. psychological maltreatment will be negatively related with perceived social support; 4. the model-of-self and model-of-other will be positively related to perceived social support; 5. perceived social support will be negatively related to body dissatisfaction; 6. depressive symptoms will be positively related to both body dissatisfaction and psychological maltreatment.

According to Griffin and Bartholomew (1994), the model-of-self and model-of-other constructs are not significantly related, providing support for the absence of this association in the proposed models. However, some research has shown a significant relation between the model-of-self and model-of-other constructs, $r = .19, p < .05$, $r = .15, p < .01$ (McLewin & Muller, 2006; Muller et al., 2008). Preliminary analyses found these two constructs to be related, thus, model 1 allowed the error terms between the model-of-self and model-of-other constructs to correlate.

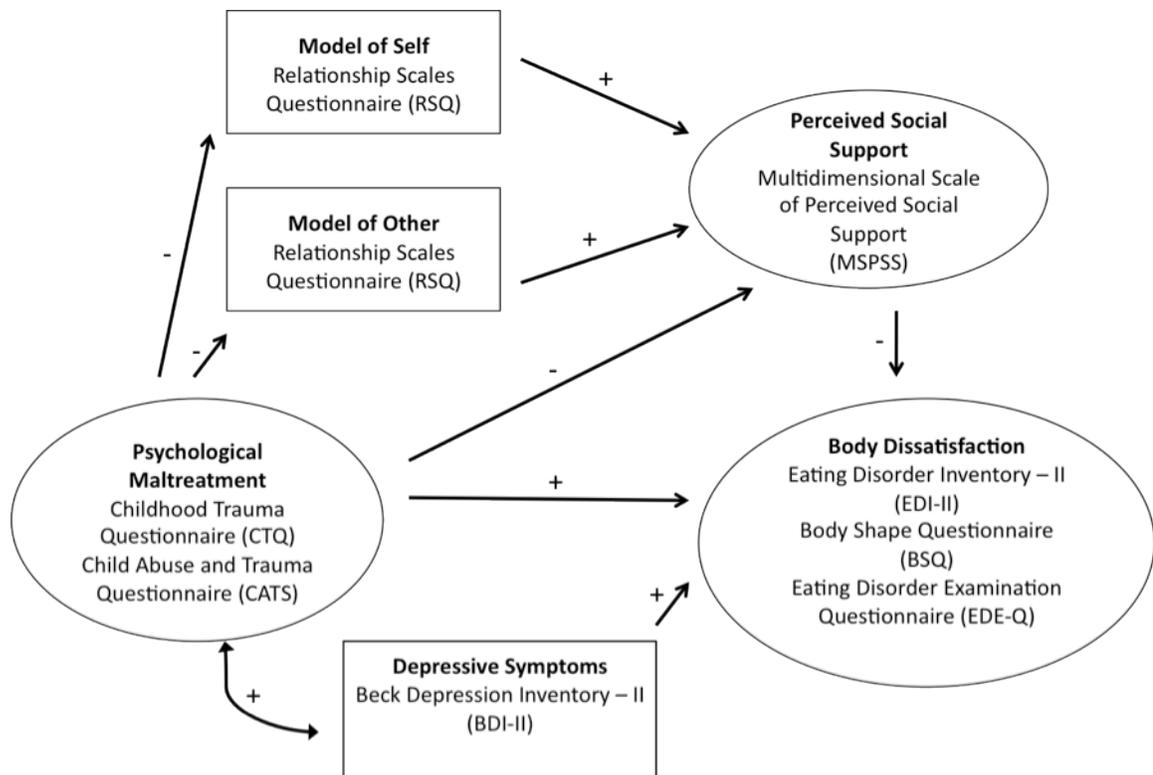


Figure 2. Path diagram for model 1.

Note. The model-of-self, the model-of-other, and perceived social support are hypothesized to fully mediate the relation between psychological maltreatment and body dissatisfaction.

Model 2 (Figure 3) hypothesized the association between childhood psychological maltreatment and body dissatisfaction to be mediated by the model-of-self. This model included pathways from psychological maltreatment to body dissatisfaction and the model-of-self. A pathway also was included from the model-of-self to body dissatisfaction. Finally, a pathway was included from depression to body dissatisfaction, and a covariate was added between psychological maltreatment and depression.

The current literature search only identified one study that examined and found an association between perceived social support and body dissatisfaction (Stice, 2001). Thus, because of a paucity of research supporting the link between perceived social support and body dissatisfaction, perceived social support was not included in this model. Moreover, evidence indicates a stronger negative association between the model-of-self and body dissatisfaction compared to perceived social support and body dissatisfaction providing a rationale for testing whether the model-of-self independently mediates the relation between psychological maltreatment and body dissatisfaction (Muller & Lemieux, 2000).

Model 2 was based on the following hypotheses: 1. child psychological maltreatment will be positively associated with body dissatisfaction; 2. child psychological maltreatment will be negatively associated with the model-of-self; 3. the model-of-self will be negatively associated with body dissatisfaction; 4. depressive symptoms will be positively related to body dissatisfaction and psychological maltreatment.

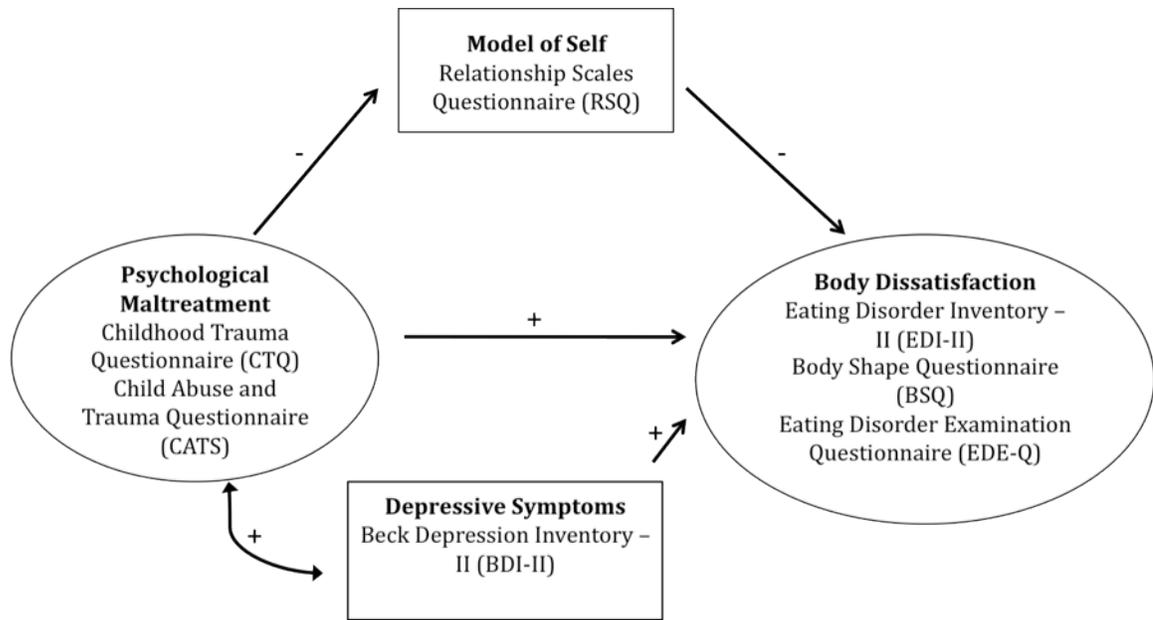


Figure 3. Path diagram for model 2.

Note. The model-of-self is hypothesized as a mediator of the relation between psychological maltreatment and body dissatisfaction.

CHAPTER II

METHOD

Participants

Ethnic composition of the sample was as follows: Caucasian ($n = 174$), East Asian ($n = 29$), European ($n = 18$), South Asian ($n = 14$), African Canadian ($n = 11$), Hispanic ($n = 1$), Native Canadian ($n = 1$), other ($n = 22$), and 8 participants (2.8%) did not identify with an ethnicity. The mean age of the sample was 23 years ($SD = 6.9$, range = 17 - 55). Marital and relationship status of the sample was as follows:

Married/Common Law ($n = 30$), Single ($n = 112$), In a Relationship ($n = 123$), Divorced/Separated ($n = 11$), Widowed ($n = 1$) and 1 participant did not identify marital status.

The literature indicates gender differences in body dissatisfaction. More specifically, women want to be thinner and leaner, and men want to be bigger and more muscular. Due to the difference in the type of body dissatisfaction for females and males (Mendelson, Mendelson, & White, 2001), and the different patterns of associations between attachment style and body dissatisfaction between men and women (Elgin & Pritchard, 2006), only females were used in the current study.

MacCallum, Browne, and Sugawara (1996) suggested a sample of 250 would be adequate to test the proposed models at a power level of .80 for maximum likelihood estimation using SEM. According to MacCallum and Browne, the sample of 278 that was obtained for this study was sufficient for SEM analyses for model 1, but not for model 2. Participants were recruited from the University of Windsor participant pool and received course credit for participation.

Previous research has shown that 37.5% of University of Windsor female undergraduates reported at least mild levels of emotional neglect and abuse as measured by the Childhood Trauma Questionnaire – Short Form (CTQ-SF) (Paivio & Cramer, 2004). This ensured a good range of variability in scores for all analyses.

Measures

If applicable, the instructions for the measures were modified to be congruent with a computer based response style format. For example, the instructions for the CTQ-SF will be slightly modified to ask participants to “choose” rather than “circle” the number under the response that best describes how they feel. In addition the instructions, “If you wish to change your response, put an “X” through it and circle your new choice” will be removed because these instructions only apply to paper and pencil self-reports. Internal consistencies for all measures are provided in Table 1.

Demographic Questionnaire. A general demographic questionnaire (Appendix A) was included at the beginning of the proposed study to gather information such as age, gender, and ethnic background. This questionnaire was formatted so participants could choose responses from a pull-down menu. Participants also had the option to choose “other” and provide a text response rather than having to choose from a forced option menu.

Indicators for Childhood Psychological Maltreatment Latent Construct

Childhood Trauma Questionnaire Short Form (CTQ-SF; Bernstein et al., 2003). The CTQ-SF is a 28-item retrospective screening measure for self-reported experiences of neglect and abuse. Items are rated on a 5-point scale with response options ranging from 0 (*never true*) to 4 (*very often true*). Higher scores on the CTQ-SF indicate the

presence of more maltreatment. The CTQ-SF yields 5 clinical scales: emotional, physical, and sexual abuse, as well as emotional and physical neglect. In addition, three validity items are included to assess minimization and denial. According to Bernstein and Fink (1998), an acceptable score on the minimization and denial subscale is a mean score of less than one. The CTQ-SF has been shown to be sensitive to more mild experiences of neglect and abuse making it suitable for non-clinical populations. The emotional neglect and emotional abuse subscales comprised two of the three indicators for the Psychological Maltreatment latent construct in the proposed models.

Examples of items from each subscale are: “People in my family hit me so hard that it left me with bruises or marks” (physical abuse), “Someone tried to touch me in a sexual way or tried to make me touch them” (sexual abuse), “I thought that my parents wished I had never been born” (emotional abuse), “My family was a source of strength and support” (emotional neglect, reversed), and “I didn’t have enough to eat” (physical neglect). The emotional abuse and emotional neglect subscales will be used as indicators for the psychological maltreatment latent variable. The authors of the CTQ-SF provide cut-off scores for mild, moderate, and severe levels of maltreatment, which allow for meaningful variability in scores (Bernstein et al., 2003).

The psychometric properties of CTQ-SF are acceptable. The instrument also was validated using four diverse samples including adult substance abusing patients, adolescent psychiatric inpatients, substance abusing individuals from a community sample, and individuals from a normative community sample. Each of the five clinical subscales showed internal consistencies that ranged from adequate to excellent across all samples: physical abuse ($\alpha = .81 - .86$), sexual abuse ($\alpha = .92 - .95$), and emotional abuse

($\alpha = .84 - .89$), and physical neglect ($\alpha = .61 - .78$) and emotional neglect ($\alpha = .85 - .91$; Bernstein et al., 2003). The concurrent validity of this scale is good, as it correlates significantly with therapist's rating of the presence or absence of abuse and neglect (see Bernstein et al., 2003). Construct validity was shown through moderate to high correlations between similar observed and reported abuse and neglect ($r = .48 - .75, p \leq .001$), although there was a moderate correlation between physical abuse and physical neglect ($r = .48$; Bernstein et al., 2003) possibly indicating physical abuse and neglect occur frequently together, or the two subscales may be tapping similar constructs. Test-retest reliability is good for all subscales, ranging from $r = .87$ (total scale) to $r = .97$ (emotional neglect) over an 8 to 10 week period (Paivio & Cramer, 2004).

Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995). The CATS (Appendix B) is a 38-item self-report questionnaire that measures perceptions of the degree of trauma and stress experienced during childhood resulting from abuse and neglect. Each item is rated on a 5-point scale with responses ranging from 0 (*never*) to 4 (*always*). Higher scores on the CATS indicate the subjective experience of more childhood abuse and neglect. The CATS was designed to measure and yield three subscales: sexual abuse, negative home environment/neglect, and punishment. Examples of items from each subscale are: "When either of your parents was intoxicated, were you ever afraid of being sexually mistreated?" (sexual abuse), "How often were you left alone at home as a child?" (negative home environment/neglect), and "When you were punished as a child or teenager, did you understand the reason you were punished?" (punishment).

The CATS has demonstrated adequate psychometric properties on a sample of 834 college students (522 female, 312 male). Internal consistency for the total CATS score and for each subscale ranged from adequate to excellent: total ($\alpha = .90$), negative home atmosphere/neglect scale ($\alpha = .86$), sexual abuse ($\alpha = .76$), and punishment ($\alpha = .63$). Test-retest reliability is good for the total score, $r = .89$, negative home atmosphere subscale, $r = .91$, sexual abuse subscale, $r = .85$, and for the punishment subscale, $r = .71$ over a 6 to 8 week period. Concurrent validity has been demonstrated by the CATS total correlating highly with the Dissociative Experiences Scale ($r = .33, p < .0001$; DES; Bernstein & Putnam, 1986). Significant correlations were also found for each of the CATS subscales: negative home atmosphere subscale, $r = .29, p < .001$, sexual abuse subscale, $r = .14, p < .002$, and for the punishment subscale, $r = .24, p < .001$. In addition the CATS was found to correlate significantly with depression ($r = .40, p < .001$) and stressful life events ($r = .29, p < .001$).

Kent and Waller (1998) proposed that the CATS also contain 7 items that reflect emotional abuse. A sample of 236 female undergraduate students completed the CATS and the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The psychometric properties for the CATS were mostly adequate: negative home atmosphere subscale ($\alpha = .82$), sexual abuse subscale ($\alpha = .61$), and for the punishment subscale ($\alpha = .80$). The new emotional abuse subscale showed a high internal consistency ($\alpha = .88$). Concurrent validity also was demonstrated with each CATS subscale significantly correlating to HADS measures of depression and anxiety. Thus, the 7-item emotional abuse subscale derived from the CATS by Kent and Waller (1998) was used in the current study to create an indicator for the Psychological Maltreatment latent construct.

Indicators for Body Dissatisfaction Latent Construct

Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987).

The BSQ (Appendix C) is a 34-item self-report questionnaire that measures concerns over body shape and body dissatisfaction. The BSQ is designed to measure experiences of “feeling fat”, which is a core concern among individuals with bulimia nervosa. Each item is rated on a 6-point scale with response options ranging from 1 (*never*) to 6 (*always*). The scores from the 36 items are summed to create a total composite score for the BSQ. Higher scores on the BSQ indicate the presence of more body dissatisfaction. Examples of items on the BSQ are: “Have you been so worried about your shape that you have been feeling that you ought to diet?” and “Have you been particularly self-conscious about your shape when in the company of other people?”

The BSQ has good psychometric properties. Internal consistency has been shown to be excellent ($\alpha = .97$; Pook, Tuschen-Caffier, & Braehler, 2008). Concurrent validity was evidenced through correlations between the BSQ and the Body Dissatisfaction subscale of the Eating Attitudes Test (EAT; Garner & Garfinkle, 1979) among patients with bulimia nervosa, and with the EAT total score among occupational therapy students (Cooper et al., 1987). Mean scores on the BSQ were significantly higher for females who reported weight and shape concerns compared to females who reported no weight and shape concerns, $t = 19.6$, $df = 172$, $p < .000$. Rosen, Jones, Ramirez, and Waxman (1996) also demonstrated concurrent validity, as the BSQ was positively correlated with feelings of shame and embarrassment measured by the Body Dysmorphic Disorder Examination (BDDE; Rosen, Reiter, & Orosan, 1995) and overall appearance concerns measured by the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990). Criterion validity was demonstrated, as the BSQ could differentiate

clinical obese dieters from nonclinical individuals, and differentiate between persons with more or less weight concern (Rosen, Jones, Ramirez, & Waxman, 1996). Test-retest reliability also has been demonstrated to be good with a reliability coefficient of .88 (Rosen et al., 1996).

Eating Disorder Inventory – II (EDI-II; Garner, 1991). The EDI-II is a 91-item self-report measure of cognitive and behaviours that are commonly associated with eating disorders. Each item is rated on a scale ranging from 0 (*never*) to 6 (*always*). A greater score reflects more symptomatology. Each item is weighted from 0 to 3 and is based on the theoretical premise that non-symptomatic responses should not contribute to a total score reflecting the presence of psychopathology (Garner, 1991). The EDI-II yields 8 subscales: Drive for Thinness scale appears to measure excessive concern with dieting, preoccupation with weight, and fear of weight gain. The Bulimia scale measures the tendency to think about and engage in bingeing behaviours. Bingeing is indicative of bulimia nervosa and differentiates the restricting and non-restricting subtypes of anorexia nervosa. The Body Dissatisfaction subscale measures dissatisfaction with the overall shape and size with various body regions. The Ineffectiveness scale measures feelings of inadequacy, insecurity, worthlessness, and lack of control over one's life. The Perfectionism scale measures the extent to which individuals believe that only outstanding personal achievements are acceptable and expected from themselves and others. The Interpersonal Distrust scale assesses an individual's feelings of alienation and reluctance related to close relationships. The Introspective Awareness scale measures an individual's confidence to recognize emotional states and feelings of hunger and satiety.

The Maturity Fears scale measures the desire to stop growing older and regress to the safety of preadolescent years.

The EDI-II yields internal consistencies across all subscales ranging from good to excellent in a sample of females with eating disorders ($\alpha = .83$ to $.93$; Garner et al., 1983). Internal consistency has also been shown to range from good to excellent for non-eating disorder patients with internal consistencies for all subscales ranging from $.77$ to $.93$, except for the Perfectionism subscale ($\alpha = .69$) in one sample (Gleaves & Eberenz 1994; Espelage, Mazzeo, Aggen, Quittner, Sherman, & Thompson, 2003; Raciti & Norcross, 1987; Vandereycken, Fekken, & Boland, 1988). Content validity has been demonstrated with item-total subscale correlations in a sample with eating disorders ($r = .54$ to $.75$, $p < .05$) and in a sample without eating disorders ($r = .40$ to $.78$, $p < .05$; Garner, 1991). Convergent validity has been demonstrated with correlations between the EDI-II Body Dissatisfaction, Bulimia, and Drive for Thinness scales and the EAT-26 (Garner et al., 1982) of $.44$, $.26$, and $.61$, $p < .05$, respectively. Discriminant validity has been shown by Espelage and her colleagues (2003) by yielding significant differences on the eight EDI-II scales between a clinical and non-patient college samples. The EDI-II scales correctly classified 92% of the non-patient sample and correctly classified 84% of the clinical sample.

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994).

The EDE-Q is a 38-item measure of behaviours and attitudes that are characteristic of individuals with eating disorders. The EDE-Q was adapted from the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987), which assesses specific psychopathology associated with eating disorders. Items are rated on a scale ranging from 0 (*No Days*) to 6

(*Everyday*) to assess the frequency and severity of behaviours and other key features of eating disorders over the past 28 days. Higher scores on the EDE-Q indicate the presence of more weight or shape dissatisfaction, and more eating pathology. Four subscales form the EDE-Q: Dietary Restraint (measures attempts to restrict food intake), Eating Concern (measures concerns over food consumption), Shape Concern and Weight Concern (measures of the degree of concern about shape and weight, respectively).

Although the EDEQ also yields a Dietary Restraint and Eating Concern subscale, they were not of focus for the current study, because the Dietary Restraint and Eating Concern subscales are not measures of body related satisfaction. Thus, only the Weight Concern and Shape Concern subscales were used as measured variables for the Body Dissatisfaction latent construct. Examples of items from each subscale are: “Have you definitely wanted your stomach to be flat?” (Shape Concern), and “Have you had a strong desire to lose weight?” (Weight Concern).

Although the EDE-Q has been criticized because many concepts related to eating pathology are difficult to assess, the EDE-Q correlates well with the EDE. Internal consistency is good for the EDE Weight Concern subscale and adequate for the Shape Concern subscale with internal consistencies of .82 and .68, respectively in a clinical eating disorder and community sample. Correlations between the EDE-Q and EDE have been shown to be high in a community and eating disorder sample for both the Weight Concern (.79 - .85, $p < .001$) and the Shape Concern (.80 - .91, $p < .001$) subscales (Fairburn & Beglin, 1994; Passi, Bryson, & Lock, 2002) and in a sample of substance abusing women seeking treatment: Weight Concern ($r = .85, p < .0001$), Shape Concern ($r = .84, p < .0001$; Black & Wilson, 1996).

Adult Attachment Style Manifest Constructs

Relationship Scales Questionnaire (RSQ; Griffin and Bartholomew, 1994). The RSQ (Appendix D) is a 30-item measure of the fundamental dimensions of adult attachment. Items were drawn from Bartholomew and Horowitz's (1991) Relationship Questionnaire, and Collins and Read's (1990) Adult Attachment Scale. Items are rated on a 5-point scale with response options ranging from 1 (*not at all like me*) to 5 (*very much like me*). The RSQ can yield several sets of subscales based on various attachment patterns depending on the combination of items. Griffin and Bartholomew (1994) created a two-category model of attachment that is formed by classifying attachment into two dimensions: the self and the other. Alternatively, a four-category model of attachment proposed by Bartholomew and Horowitz (1991) also can be formed.

The current study used the two-category model of attachment, which has good construct validity for both the self and other dimensions of attachment (Bartholomew, 1990). Convergent validity is demonstrated by the moderately high correlations using a multi-method (self-report, family interview, peer interview) approach to measure each attachment dimension. Discriminant validity of the self and other dimensions also has been demonstrated by relatively small correlations between attachment dimensions within method (self-report, family interview, peer interview; Griffin & Bartholomew, 1994). Construct validity was demonstrated by relating each attachment dimension to hypothesized direct measures of each attachment dimension. The self-dimension (positivity about the self) was correlated highly with self-report measures of self-esteem, subjective distress, and self-acceptance ($r = .77$ to $.86$, $p < .01$). The other dimension (positivity about interpersonal relationships) correlated moderately to highly with self-

and friend-reports of sociability, and degree of warmth or coldness ($r = .46$ to $.73$, $p < .01$; Griffin & Bartholomew, 1994).

The two attachment dimensions (self and other) will be calculated following guidelines from Bartholomew: a) the model-of-self [(fearful + preoccupied) – (secure + dismissing)] where higher scores indicate a greater sense of self worth, and lower anxiety about being rejected, and b) the model-of-other [(dismissing + fearful) – (secure + preoccupied)] where higher scores indicate more comfort and closeness with others and a tendency to seek close relationships. The model-of-self and model-of-other attachment dimensions were used as manifest variables in the proposed models.

Indicators for Perceived Social Support Latent Construct

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS (Appendix E) is a 12-item measure the perceived adequacy of social support from family, friends, and significant others. Items are rated on a 7-point scale with response options ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Higher scores on the MSPSS indicate the presence of more perceived social support. Scores for each subscale are determined by calculating the mean score of all the items in a particular subscale. The MSPSS consists of three subscales: Family, Friend, and Significant Other. Examples of items from each subscale are: “I can talk about my problems with my family” (Family subscale), “My friends really try to help me” (Friend subscale), and “I have a special person who is a real source of comfort for me” (Significant Other subscale). The items in the Significant Other subscale are not framed with a valence toward romantic relationships. The three MSPSS subscales each formed an indicator comprising the Perceived Social Support latent construct.

The psychometric properties of the MSPSS have been shown to be good in diverse populations, including college students, prepartum women, male and female adolescents, and male and female pediatric residents (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). Cronbach's alpha ranges from adequate to excellent for each subscale: Significant Other ($\alpha = .72-.98$), Friends ($\alpha = .87-.94$), and Family ($\alpha = .74-.90$; Zimet et al., 1988; Zimet et al., 1990), and for the total scale, .84 and .92 (Zimet et al., 1988; Zimet et al., 1990). Zimet et al., (1988) hypothesized that perceived social support as measured by this instrument would be negatively related to reported anxiety and depression symptoms. Correlations between the MSPSS subscales and the Depression and Anxiety subscales of the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) were determined to illustrate construct validity. The Family subscale was negatively related to anxiety $r = -.18, p < .01$, and depression $r = -.24, p < .01$, the Friends subscale was negatively related to depression $r = -.24, p < .01$, as was the Significant Other subscale to depression $r = -.13, p < .05$, and the total MSPSS score to depression, $r = -.25, p < .01$. Test-retest reliability over a 2 to 3 month period was .85, .72, .85, and .75 for the total score, Significant Other, Family, and Friends subscales, respectively (Zimet et al., 1988). A gender difference was found whereby females reported having significantly more support from significant others, from friends, and overall: $F(1, 273) = 20.28, p < .001$; $F(1, 273) = 32.73, p < .001$; and $F(1, 273) = 24.38, p < .001$, respectively (Zimet et al., 1988).

Covariate

Beck Depression Inventory-II (BDI-II; Beck, Steer, Ball, & Ranieri, 1996). The BDI-II is a 21-item measure of depression symptoms and severity. Items are rated on a 4-

point scale with varying response options. The time frame for the BDI-II ratings is for the past two weeks, including the day of testing.

The BDI-II has good psychometric properties for both clinical and non-clinical populations as well as adolescents and adults (Beck et al., 1996; Krefetz, Steer, Gulab, & Beck, 2002; Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004; Steer, Ball, Ranieri, & Beck, 1997; Steer, Ball, Ranieri, & Beck, 1999). Internal consistency is excellent ranging from .90 to .93 (Beck et al., 1996; Krefetz et al., 2002; Osman et al., 2004; Steer et al., 1999). Convergent and discriminant validity has been demonstrated by the BDI-II correlating moderately (.40-.60) with scores on internalizing measures and low (.20-.39) on externalizing measures (Osman et al., 2004) and through the presence of higher mean BDI-II scores for adolescents who were diagnosed with major depressive disorder compared to adolescents without major depressive disorder (Krefetz et al., 2002). Concurrent validity has been demonstrated with the Reynolds Adolescent Depression Scale, $r = .84, p < .001$ (RADs; Reynolds & Mazza, 1998) the Beck Hopelessness Scale, $r = .62-.69, p \leq .01$ (BHS; Beck, Weissman, Lester, & Trexler, 1974), the Suicidal Behaviors Questionnaire – Revised, $r = .51-.60, p \leq .01$ (SBQ-R; Osman, Bagge, Gutierrez, Konick, Kopper, & Barrios, 2001), and the Depression subscale of the SCL-90-R (Derogatis, 1983), $r = .89, p < .001$ (Steer, Ball, Ranieri, & Beck, 1997).

The instructions “Circle the number beside the statement you have picked” was adapted for a web based format, instructing participants to “choose” a response rather than “circle”. In addition, the numerical answer choices for Items 16 and 18 were changed from “0, 1a, 1b, 2a, 2b, 3a, and 3b,” to “0, 1, 2, 3, 4, 5, and 6” to allow for collection of strictly numerical data.

Procedure

Participants signed up for this study through the University of Windsor's Participant Pool system (see Appendix F for Participant Pool Advertisement). Once signed up for the study, participants were given access to a web link containing a set of nine web-formatted questionnaires. The instructions for some of the questionnaires were slightly modified so they are congruent with a web based administration (e.g., the word "circle" replaced with "choose"). Prior to continuing with the study, participants agreed to a web version of the consent form (Appendix G), which provided a letter of information regarding the study that was approved by the University of Windsor Review and Ethics Board. Participants were notified via the consent form that they would be allowed to withdraw participation from the study at any point in the study if they desired.

The web-based format allowed participants to answer the questionnaires in a private place where they felt comfortable. This approach likely decreased socially desirable responding and increased the honesty of responses. Concerns have been raised regarding the seriousness and motivation of participants in web-based studies and worries about inconsistent findings from web-based research. Contrary to this notion, research has shown that participants are indeed as serious and as motivated to complete web-based studies compared to participants of paper-and-pencil studies, and the findings obtained from web-based studies are consistent with findings obtained using traditional methods (Gosling, Vazire, Srivastava, & John, 2004).

Planned Analyses

Depression was significantly correlated with body dissatisfaction; thus, the BDI-II was added to the proposed models as a manifest variable, to be used as a covariate for

body dissatisfaction. The addition of the depressive symptoms construct was based on both a theoretical and statistical foundation, which allowed for more variance in the model to be accounted for, thus, helping to improve model fit. Analysis of a Moment Structures (AMOS) version 19 software was used to examine the recursive models proposed in model 1 and models 2 using a ML estimation method. The ML estimation method is the most commonly used in SEM research and is robust against moderate violations of normality for endogenous variables in a model (Byrne, 2010; Kline, 2011). The data for the observed variables were imposed on the restricted structure of the hypothesized model to determine how well the observed data fits the restricted structure. A chi-squared (χ^2) goodness-of-fit test was used to determine whether the fit of model 2, compared to model 1 provided improved fit as the parameters extraneous to model 2 are removed. This allows for the identification of the model that best answers the proposed hypotheses.

In addition to the χ^2 goodness-of-fit test, several alternative incremental, and residual-based measures of model fit were examined, because the χ^2 test can be affected by sample size and overestimate the χ^2 statistic if the assumption of multivariate normality is violated, resulting in increased Type I error. The Tucker-Lewis Index (TLI, also referred to as the non-normed fit index; Tucker & Lewis, 1973), Comparative Fit Index (CFI; Bentler, 1990), and Root Mean Square Error of Approximation (RMSEA; Steiger & Lind, 1990) with a 90% confidence interval were examined. The TLI, sensitive toward model complexity, and the CFI, a non-centrality index of fit, measures the relative improvement in fit of the proposed models over that of the null model (specifies all

measured variables to be uncorrelated). The RMSEA is a parsimony-corrected fit index and measures the mean of the absolute covariance residual.

The cutoffs recommended by Hu and Bentler (1999) were considered to assess the fit of the proposed models (RMSEA < .06, CFI > .95, TLI > .95). However, it has been proposed that the recommended guidelines for cutoff criteria proposed by Hu and Bentler (1999) can be too stringent and should not be strictly adhered to (Marsh, Hau, & Wen, 2004). As a result the adoption of an incremental fit index cutoff of >.90 was acceptable. These criteria were be used as an all-or-none cut off, but rather as a conventional guideline to assist in determining the adequacy of fit for the proposed models.

CHAPTER III

RESULTS

Preliminary Analyses

Prior to the analyses, the data were examined for missing values. From the original 312 participants, 24 participants were removed for having failed to complete one or more entire questionnaires. An additional seven participants were removed for responding “0” to all 91 items on the EDI-II, leaving 281 participants. A significantly higher proportion of participants did not answer all items on the EDI-II compared to the other measures. However, no identifiable demographic information differed between individuals who completed the EDI-II and individuals who did not complete the EDI-II. An additional three participants were removed from the data set because they were identified as multivariate outliers leaving a final sample of 278. The exact cause of the missing data cannot be determined, however, several possible reasons include participant drop out, computer difficulties with an internet web browser, or unwillingness to complete certain measures.

Replacing missing values in the data set prior to the analyses allowed for the production of modification indices in AMOS. Thus, observations that were missing at random were substituted using SPSS’s series mean missing value replacement function so the mean scores for all subscales were not impacted. Descriptive statistics, prior to and after the missing value replacement, were compared and examined to ensure the results were not be influenced by the missing value imputation. No significant differences were found in the results after missing values were imputed.

Internal consistency analyses were conducted for all the questionnaires and subscales used as indicators or measured variables in the proposed models (Table 1). Cronbach's alphas were good for all measures with internal consistencies above .87, with the exception of the RSQ subscales, which ranged from .26 to .77. A subscale item analysis was conducted for the RSQ to determine if any items had weak loadings on their respective subscale. The removal of item 6 (reverse scored; "I am comfortable without close emotional relationships") and item 8 ("I want to be completely emotionally intimate with others") from the Preoccupied subscale increased Cronbach's alpha from .26 to .58, and the removal of item 22 ("I prefer not to have other people depend on me") from the Dismissing subscale increased Cronbach's alpha from .58 to .61. Thus, all subsequent analyses including the RSQ did not include items 6, 8, and 22. Cronbach's alphas and descriptive statistics for all measures are presented in Table 1.

To ensure the reliability of the latent constructs, the maximal reliability coefficient (H) proposed by Hancock and Mueller (2001; as cited in Gagne & Hancock, 2006) was calculated. The maximal reliability coefficient is the extent to which a latent construct is reproducible from its own measured indicators (Gagne & Hancock, 2006). Maximal reliability coefficients were good for each latent construct: psychological maltreatment ($H = .94$), body dissatisfaction ($H = .94$), and perceived social support ($H = .89$).

Table 1. *Internal Consistency and Descriptive Statistics for Measures*

Questionnaire/Subscale	M	SD	Range	α
CTQ Emotional Abuse	.73	.85	.00 – 4.00	.88
CTQ Emotional Neglect	.90	.96	.00 – 4.00	.93
CATS Psychological Abuse	1.09	.82	.00 – 4.00	.92
BSQ Total	88.31	41.20	.00 – 196.00	.98
EDEQ Shape	2.51	1.78	.00 – 6.00	.91
EDEQ Weight	2.24	1.74	.00 – 6.00	.88
EDEQ Shape and Weight	4.75	3.47	.00-12.00	.95
EDI Body Dissatisfaction	28.39	11.28	5.00 – 50.00	.93
RSQ Secure	3.15	.61	1.20 – 4.60	.49
RSQ Fearful	2.87	.83	1.00 – 5.00	.77
RSQ Preoccupied	2.68	.88	1.00 – 5.00	.58
RSQ Dismissing	3.41	.68	1.25 – 5.00	.61
MSPSS Family	5.27	1.67	.00 – 7.00	.95
MSPSS Friend	5.42	1.53	.00 – 7.00	.94
MSPSS Significant Other	5.66	1.62	.00 – 7.00	.96
BDI-II	13.57	12.03	.00 – 68.00	.94

Assumptions

All assumptions were checked prior to conducting the SEM analyses using AMOS 19. Myers (1990) suggested that collinearity is not problematic if the variance inflation factors (VIF) are less than 10, which was found to be the case for the current analyses. In addition, Menard (1995) recommended that tolerance statistics below 0.2 be of concern, which also was not the case in the current analyses. High VIF (e.g., >10) reduces the stability of the regression equation and the effects of the predictor variables on the outcome variables are less reliable.

Visual inspection of normality plots indicated that the independent variables were positively skewed. Bentler (2005) suggested that kurtosis values > 5 are indicative of a non-normal distribution. All three indicators for the psychological maltreatment latent construct were positively skewed with a slightly leptokurtic distribution. Only the CTQ emotional abuse subscale was found to have a non-normal kurtosis, according to Bentler's suggestion.

A logarithmic transformation was applied to the data in an attempt to create more normal distributions among the indicators of the psychological maltreatment latent construct. After the data transformation was conducted, the distributions of the variables were still non-normal. The data transformation did not significantly benefit normality, thus, the analyses were conducted without the data transformation. Furthermore, the transformation was not used in the analyses because Tabachnik and Fidell (2007) warn against using transformations unless necessary, as they can make the data more difficult to interpret.

Seven multivariate outliers were detected through examination of Mahalanobis distance at a conservative χ^2 cut-off of 16.27, $p < .001$. Examination of the independent and dependent variables indicated that seven participants were outliers on the combination of the CTQ emotional abuse subscale and the CTQ emotional neglect subscale.

Although these seven participants were considered statistical outliers, all but three of these participants were retained for the analyses because the cases appeared to be part of the intended population. Upon further examination of the outliers, three participants were deleted because they had responded “0” to all of the items on the CTQ, which contributed to their identification as an outlier.

MacCallum, Browne, and Sugawara (1996) suggested a sample size of approximately 231 to achieve a power of .80 for model 1 ($df = 45$), and a sample of approximately 580 to achieve a power of .80 for model 2 ($df = 16$). According to MacCallum and Browne (1996), a sample size of 278 ($df = 16$) yields a power of approximately .50.

Table 2. Correlation Matrix for Measures

Observed Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. CTQ EA	1	.66**	.81**	.31**	.18**	.24**	-.29**	-.23**	-.43**	-.17**	-.18**	.34**
2. CTQ EN	-	1	.56**	.24**	.18**	.17**	-.31**	-.23**	-.53**	-.21**	-.23**	.32**
3. CATS	-	-	1	.25**	.16**	.20**	-.27**	-.20**	-.37**	-.11**	-.10**	.29**
4. BSQ	-	-	-	1	.72**	.82**	-.35**	-.24**	-.20**	-.13**	-.14**	.49**
5. EDI – II BD	-	-	-	-	1	.78**	-.30**	-.18**	-.10	-.02	-.07	.42**
6. EDEQ Weight/Shape	-	-	-	-	-	1	-.35**	-.20**	-.13*	-.12*	-.20	.54**
7. RSQ Self	-	-	-	-	-	-	1	.26**	.23**	.25**	.25**	-.53**
8. RSQ Other	-	-	-	-	-	-	-	1	.22**	.18**	.22**	-.29**
9. MSPSS Family	-	-	-	-	-	-	-	-	1	.66**	.67**	-.22**
10. MSPSS Friend	-	-	-	-	-	-	-	-	-	1	.76**	-.20**
11. MSPSS Sig. Other	-	-	-	-	-	-	-	-	-	-	1	-.17**
12. BDI-II	-	-	-	-	-	-	-	-	-	-	-	1

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

1. CTQ Emotional Abuse, 2. CTQ Emotional Neglect, 3. CATS, 4. BSQ, 5. EDI Body Dissatisfaction, 6. EDEQ Weight and Shape, 7. RSQ Model-of-Self, 8. RSQ Model-of-Other, 9. MSPSS Family, 10. MSPSS Friend, 11. MSPSS Significant Other, 12. BDI-II

Table 3. *Standardized and Unstandardized Coefficients for SEM Models*

Observed Variable	Model 1 Latent Construct (R^2)	Model 2 Latent Construct (R^2)	β	B	SE	p
CTQ Emotional Abuse	PM	PM	.94	1.15	.06	< .001
CTQ Emotional Neglect	PM	PM	.69	.84	.06	< .001
CATS Psychological Abuse	PM	PM	.85	.87	.04	< .001
EDEQ Weight/Shape	BD (.31)	BD (.33)	.94	.35	.02	< .001
BSQ	BD (.31)	BD (.33)	.87	10.88	.52	< .001
EDI – II Body Dissatisfaction	BD (.31)	BD (.33)	.82	2.84	.15	< .001
MSPSS Family	PSS (.11)	PSS	.70	.82	.06	< .001
MSPSS Friend	PSS (.11)	PSS	.86	.92	.06	< .001
MSPSS Significant Other	PSS (.11)	PSS	.88	1.08	.07	< .001

Note. PM = Psychological Maltreatment, BD = Body Dissatisfaction, PSS = Perceived

Social Support

Examination of Measurement Models

Correlation analyses were calculated to ensure that the relations among all variables were as predicted (Table 2). Standardized and unstandardized coefficients for model 1 are presented in Table 3. Examination of the observed variables indicated mostly adequate loadings onto their respective latent variables. All loadings for the observed variables and R^2 values are presented in Table 3.

According to Baron and Kenny (1986), for mediation to exist, certain conditions must be met. First, the independent variable must be associated with the dependent variable. Second, the independent variable must be associated with the mediator variable. Third, the mediator variable must be associated with the dependent variable. Finally, the effect of the independent variable on the dependent variable should be zero, when the mediator variable is controlled for. However, recent literature has suggested that Baron and Kenny's (1986) approach has limitations, and that examining the indirect effects with a bootstrap test is preferable, especially for small to moderate sample sizes (Shrout & Bolber, 2002).

Examination of Model 1

Standardized regression weights for all pathways are presented in the structural model for model 1 (Figure 4). All pathways leading to body dissatisfaction, with the exception of the path from psychological maltreatment, were constrained to "0" to test the strength and significance of the path between psychological maltreatment and body dissatisfaction. This pathway was found to be significant ($\beta = .29, p < .01; \chi^2(51) = 289.98$). The fit indices for constrained model 1 were less than adequate, with a CFI of .87, TLI of .84, and RMSEA of .13 (.12 - .14, 90% confidence interval).

All pathways were then unconstrained to assess the effect of the mediator variables on the relation between psychological maltreatment and body dissatisfaction. The pathway from psychological maltreatment to body dissatisfaction was no longer significant ($\beta = .09, p = .17; \chi^2(45) = 114.55, p < .001$). The fit indices indicated unconstrained model 1 to have good fit, with a CFI of .96, TLI of .95, and RMSEA of .07 (.06 - .09, 90% confidence interval). Fit indices for constrained model 1 and unconstrained model 1 are presented in Table 4 and standardized parameter estimates for unconstrained model 1 are displayed graphically in Figure 4. A bias-corrected bootstrap analysis was conducted with 200 re-samples to produce parameter estimates with a 90% confidence interval to support the reliability of the results. Bias-corrected parameter estimates, which reduce the bias in the confidence interval estimates, are presented in Table 5.

Direct effects for variables in model 1 are provided in Figure 4. No indirect effect was found from psychological maltreatment to body dissatisfaction ($\beta = .00, p = .96$). However, there was an indirect effect of psychological maltreatment on perceived social support ($\beta = -.14, p < .01$). For this indirect effect to be present, an association must exist between psychological maltreatment and a negative model-of-self and/or a negative-model-of-other (Riggs & Kaminski, 2010), between psychological maltreatment and perceived social support (McLewin & Muller, 2006), and between the model-of-self and/or model-of-other, and perceived social support (Cash et al., 2004). All three of these associations were found in the current study, supporting the existence of an indirect effect from psychological maltreatment to perceived social support through attachment security

Although the pathways from the model-of-other to perceived social support and from perceived social support to body dissatisfaction were not significant in model 1, examination of the correlation matrix (Table 2) indicates these variables to be significantly related. Specifically, the model-of-other had significant positive correlations with the MSPSS Family ($r = .22, p < .01$), Friend ($r = .18, p < .01$), and Significant Other ($r = .22, p < .01$) subscales. In addition, the Family subscale had significant negative correlations with the BSQ ($r = -.20, p < .01$) and the EDEQ Weight/Shape ($r = -.13, p < .05$), the Friend subscale had significant negative correlations with the BSQ ($r = -.13, p < .01$) and the EDEQ Weight/Shape ($r = -.12, p < .05$), and the Significant Other subscale had a significant negative correlation with the BSQ ($r = -.14, p < .01$).

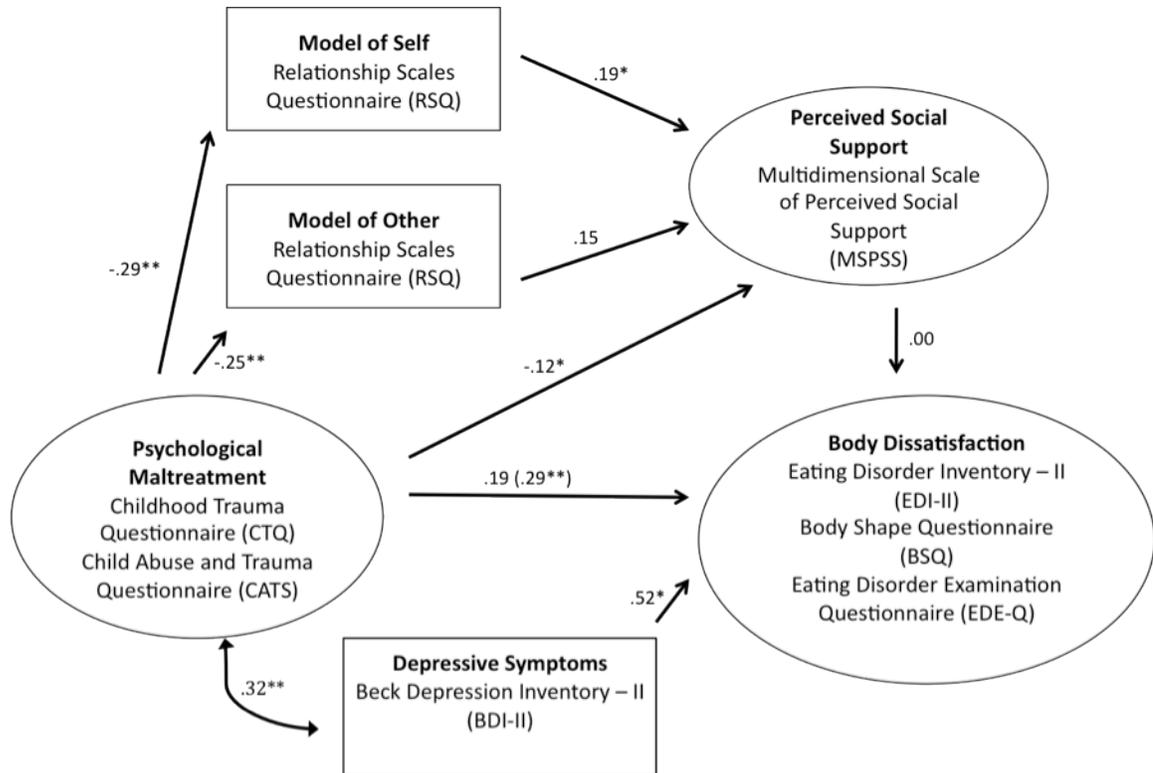


Figure 4. Standardized regression weights for model 1

Note. Standardized regression weight prior to the inclusion of mediators is in parentheses.

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

Table 4. *Fit Indices for Constrained and Unconstrained Model 1*

Model	$\chi^2(df)$	CFI	TLI	RMSEA (90% CI)	$\Delta\chi^2 (df)$	<i>p</i>
Model 1 Constrained	289.98 (51)	.87	.84	.13 (.12 - .14)	-	< .000
Model 1 Unconstrained	114.55 (45)	.96	.95	.07 (.06 - .09)	175.43 (6)	< .000

Table 5. *Bias-Corrected Parameter Estimates for Model 1 (90% CI)*

Parameter	Estimate	Lower	Upper	<i>p</i>
PM → RSQ Model-of-Self	-.29	-.39	-.20	.007
PM → RSQ Model-of-Other	-.25	-.39	-.14	.005
RSQ Model-of-Self → Perceived Social Support	.19	.07	.37	.012
RSQ Model-of-Other → Perceived Social Support	.15	.00	.29	.101
PM → Body Dissatisfaction	.09	-.03	.19	.170
PM → Perceived Social Support	-.12	-.25	-.02	.058
Perceived Social Support → Body Dissatisfaction	.00	-.11	.13	.997
BDI-II → Body Dissatisfaction	.52	.41	.61	.012

Examination of Model 2

Standardized regression weights for all pathways are present in the structural model for model 2 (Figure 5). All pathways leading to body dissatisfaction, with the exception of the path from psychological maltreatment, were constrained to “0” to test the strength and significance of the path between psychological maltreatment and body dissatisfaction. This pathway was found to be significant ($\beta = .29, p < .01; \chi^2(19) = 133.68$). The fit indices indicated model 2 to have less than adequate fit, with a CFI of .91, TLI of .87, and RMSEA of .15 (.12 - .17, 90% confidence interval).

All pathways were then unconstrained to assess the mediating effect of the model-of-self on the relation between psychological maltreatment and body dissatisfaction. The pathway from psychological maltreatment to body dissatisfaction was no longer significant ($\beta = .09, p > .05; \chi^2(16) = 26.73, p < .05$). The fit indices indicated unconstrained model 2 to have good fit, with a CFI of .99, TLI of .99, and RMSEA of .05 (.00 - .08, 90% confidence interval). Fit indices for constrained model 2 and unconstrained model 2 are presented in Table 6, and standardized parameter estimates for unconstrained model 2 are displayed graphically in Figure 5.

Indirect effects were examined for model 2. An indirect effect was found from psychological maltreatment to body dissatisfaction ($\beta = .15, p = .05$). Direct effects for variables in model 2 are provided in Figure 5. A bias-corrected bootstrap analysis was conducted with 200 re-samples to produce parameter estimates with a 90% confidence interval to support the reliability of the results. Bias-corrected parameter estimates for model 2 are presented in Table 7.

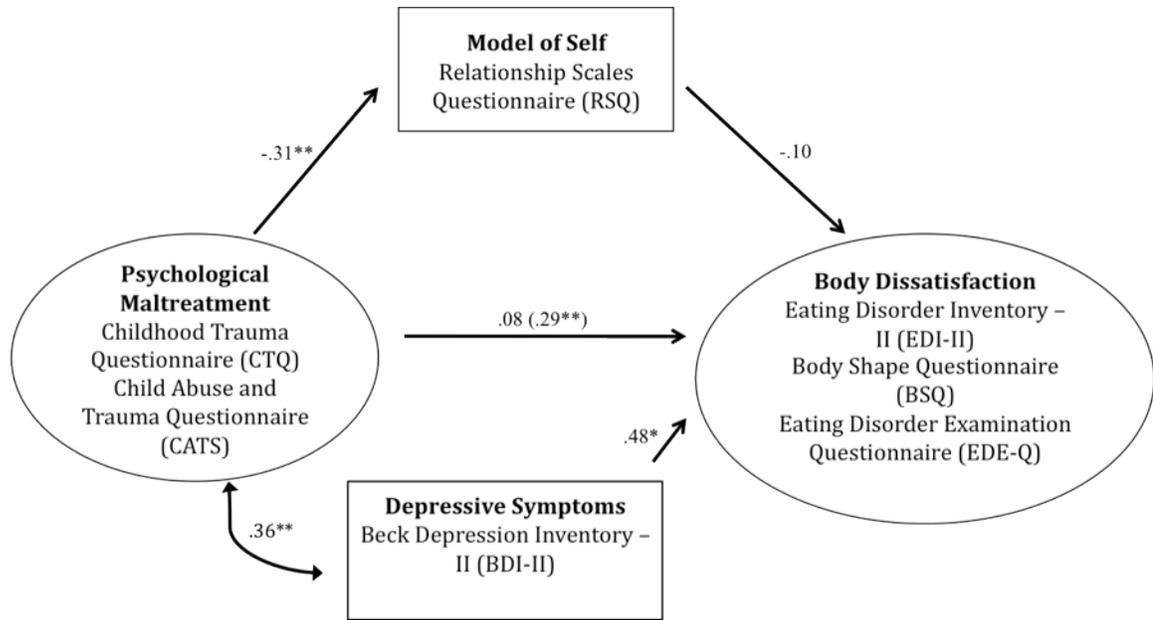


Figure 5. Standardized regression weights for model 2

Note: Standardized regression weight prior to the inclusion of mediators is in parentheses.

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

Table 6. *Fit Indices for Constrained and Unconstrained Model 2*

Model	$\chi^2(df)$	CFI	TLI	RMSEA (90% CI)	$\Delta\chi^2(df)$	<i>p</i>
Model 2 Constrained	133.68(19)	.91	.87	.15 (.12 - .17)	-	< .000
Model 2 Unconstrained	26.73(16)	.99	.99	.05 (.00 - .08)	106.95	< .05

Table 7. *Bias-Corrected Parameter Estimates for Model 2 (90% CI)*

Parameter	Estimate	Lower	Upper	<i>p</i>
PM → RSQ Model-of-Self	-.31	-.40	-.23	.005
PM → Body Dissatisfaction	.08	-.04	.18	.222
RSQ Model-of-Self → Body Dissatisfaction	-.10	-.20	.00	.077
BDI-II → Body Dissatisfaction	.48	.38	.58	.012

CHAPTER IV

DISCUSSION

Summary of Findings

The purpose of the current study was to examine whether attachment style and perceived social support mediated the relation between child psychological maltreatment and adult body dissatisfaction. Correlation analyses supported all of the proposed associations between the indicator variables with the exception of the correlations between the MSPSS subscales and the EDI-II Body Dissatisfaction subscale and between the MSPSS Significant other subscale and the EDEQ “Weight and Shape” subscale (see Table 2). Although the correlations among the measures were in the expected directions, the hypothesized relations among the constructs in the proposed models did not support mediation in model 1; however, support was provided for mediation in model 2. The discussion will refer to the associations among the variables within the models rather than the stand-alone associations presented in the correlation matrix.

Although the results for model 1 supported the hypothesized associations (see Table 2), all the associations did not remain significant when combined in model 1. In model 1, the findings were consistent with the hypothesis 1 and 2, that child psychological maltreatment would be associated with high body dissatisfaction and negatively associated with both a model-of-self and model-of-other. As expected in hypothesis 3, psychological maltreatment was associated with deficits in perceived social support. Hypothesis 4 was partially supported with a positive model-of-self being associated with more perceived social support; however, the model-of-other was not associated with deficits in social support. Hypothesis 5 also was not supported, whereby

lower perceived social support was not related to body dissatisfaction. Finally, as expected in hypothesis 6, depression was associated with higher body dissatisfaction and more psychological maltreatment.

Examination of chi-square change and additional fit indices indicated unconstrained model 1 to have significantly better fit than constrained model 1. In other words, the inclusion of the model-of-self, model-of-other, and perceived social support increased the reliability to model 1. Once the model was unconstrained, the regression weight for the pathway from psychological maltreatment to body dissatisfaction became non-significant. This finding indicates that the mediating constructs in model 1 accounted for enough variance in the model to reduce the regression coefficient between psychological maltreatment and body dissatisfaction to a non-significant level. Although the inclusion of the mediator variables improved the fit of the models, examination of the indirect effects indicated that the model-of-self, model-of-other, and perceived social support did not mediate the relation between psychological maltreatment and perceived social support.

Similar to model 1, the results for model 2 supported the hypothesized associations, but all the associations did not remain significant when combined in model 2. Model 2 supported hypothesis 1 indicating that psychological maltreatment was associated with higher body dissatisfaction. Hypothesis 2 also was supported, as psychological maltreatment was associated with a negative model-of-self. Contrary to hypothesis 3, the model-of-other was not associated body dissatisfaction. Finally, depression was found to be associated with higher body dissatisfaction and more psychological maltreatment. As model 2 hypothesized, a significant indirect effect was

found from psychological maltreatment to body dissatisfaction through the model-of-self, which indicates that the model-of-self mediated the relation between psychological maltreatment and body dissatisfaction.

Examination of chi-square change and additional fit indices indicated unconstrained model 2 to have significantly better fit than constrained model 2. In other words, the inclusion of the model-of-self increased the reliability to model 2. Once model 2 was unconstrained, the regression weight for the pathway from psychological maltreatment to body dissatisfaction became non-significant. This finding indicates that the model-of-self accounts for enough variance in the model to reduce the regression coefficient between psychological maltreatment and body dissatisfaction to a non-significant level.

Explanation of Findings Based on Past Literature: Model 1

The proposed models were based on the premise that psychological maltreatment is positively related to body dissatisfaction, which was supported by both models 1 and 2. Dunkley et al. (2010) and Kennedy et al. (2007) have documented this association by demonstrating that victims of child psychological maltreatment have greater body dissatisfaction. Because research examining the link between psychological maltreatment and body dissatisfaction is in its inception the, evidence to support it is limited. Therefore, the current findings are important because they help verify the positive association between psychological maltreatment and body dissatisfaction.

Although there is evidence for an association between childhood maltreatment such as physical abuse, sexual abuse and perceived social support (McLewin & Muller, 2006, Muller & Lemieux, 2000; Runtz & Schallow, 1997), an association between child

psychological maltreatment and perceived social support still had to be documented. Findings from the current study supported a negative association between psychological maltreatment and perceived social support, suggesting that victims of psychological maltreatment develop deficits in perceived social support.

Although past research has provided evidence for a positive association between child psychological maltreatment and attachment insecurity, no study had yet provided evidence for a link between psychological maltreatment and Bartholomew's two-dimensions of attachment security. The current study supported this link whereby psychological maltreatment was associated with a negative model-of-self and a negative-model-of-other. These findings parallel past findings by Riggs and Kaminski (2010), who found a negative association between emotional abuse and emotional neglect on one hand, and attachment anxiety and avoidance on the other hand. More specifically, a combination of emotional abuse and emotional neglect was associated with more attachment avoidance, and emotional abuse alone was associated with more attachment anxiety. Extending these findings, the current results support a link between psychological maltreatment and Bartholomew's two attachment dimensions, which are comparable to the anxious and avoidant attachment dimensions examined in Riggs and Kaminsky (2010; see Figure 1). Specifically, a negative model-of-self coincides with an anxious attachment, and a negative model-of-other coincides with an avoidant attachment. The congruence between Bartholomew's two-dimensional model of attachment and the anxious-avoidant attachment dichotomy provides empirical evidence for the finding that the model-of-self and model-of-other are related to psychological maltreatment.

The finding that the model-of-self was positively associated with perceived social support is corroborated by past research. Muller et al. (2008) found individuals with a positive model-of-other and individuals with a positive model-of-self to perceive more social support from friends, family, peers, and authority figures. Similarly, McLewin et al., (2006) found that both a positive model-of-other and model-of-self were related to greater perceived social support resources. In the context of interpersonal relationships, the development of a positive model-of-other leads individuals to view support resources as reliable, available and responsive (Muller et al., 2008) and facilitates seeking and utilizing these support resources (Lopez et al., 1998). Furthermore, a positive model-of-self leads individuals to feel worthy of care and support from others (Muller & Lemieux, 2000).

Similar to past research, the current study supported an association between the model-of-other and perceived social support (McLewin & Muller, 2008). McLewin and Muller (2006) found a positive model-of-other to be associated with greater perceptions of social support in an adult sample with a history of physical maltreatment. Conversely, Muller and Lemieux (2000) did not find a significant association between the model-of-other and perceived social support; however, the model-of-self was found to be related to perceptions of more social support in their adult sample with a history of physical, sexual, or psychological abuse. Because the specific effect of each type of abuse on the model-of-self and model-of-other was not teased apart in Muller and Lemieux (2000), the influence of each type of abuse on the model-of-self and model-of-other and their connection to perceive social support cannot be determined. Thus, it is possible that the

discrepant findings between the two aforementioned studies were due to the differential effects of abuse type.

Although a positive association was found between the model-of-other and perceived social support, this association was no longer significant when all the variables were combined in model 1. This findings is congruent with those of past studies, where a stronger association was found between the model-of-self and perceived social support than between the model-of-other and perceived social support (McLewin & Muller, 2006), which may account the non-significance between the model-of-other and perceived social support. In other words, the model-of-self may be a stronger predictor of perceived social support than is the model-of-other, rendering the path from the model-of-other to perceived social support non-significant.

Research by Harter (1986) on the development of children's self-perception and self-worth may provide a theoretical explanation for a stronger association between the model-of-self and perceived social support than for the association between the model-of-other and perceived social support. Harter's (1986) research on the development of children's self-worth proposed that the development of a self-image as worthy is rooted in positive regard, approval, and emotional support from significant others. Through repeated negative interactions and experiences with significant others, children may begin to develop poor self-worth and expectations of significant others as unreliable, inadequate, and unavailable sources of support. The model-of-self may create a general over-arching positive or negative cognitive bias toward the self and others that inhibits children from thinking that available and reliable sources of support from whom help will be forthcoming. If an individual has developed a positive model-of-other and feels that

others are a reliable and available source of support, but have not developed a positive model-of-self, they may not perceive themselves as worthy of social support and thus may not benefit from it. For example, although preoccupied individuals (positive model-of-other, negative model-of-self) think others are a reliable and available source of support, the feeling of not being worthy of this support may be what ultimately impacts their perception and utilization of social support.

Perceived social support has been suggested to be positively associated with psychological well-being (Cohen & Willis, 1985), thus it was hypothesized that individuals with more perceived social support resources would have less body dissatisfaction. One study by Stice et al., (2001) found that adolescent females with increased body dissatisfaction, dieting, and bulimic symptoms also reported deficits in perceived social support. The correlational findings from the current study supported the negative association between social support and body dissatisfaction previously documented by Stice et al. (2001). However, this association was no longer significant when combined in model 1, indicating that perceived social support may not function as a protective factor against body dissatisfaction for individuals who have been psychologically maltreated.

The findings of research examining the relation between depression and body dissatisfaction in a female sample are mixed (Paxton et al., 2006; Stice & Whitenton, 2002). Contrary to the current results, Stice and Whitenton (2002) found that increased depression was not related to more body dissatisfaction in adolescent females. A possible answer for the discrepancy in these findings may be due to the temporal manifestation of depression in relation to the development of body dissatisfaction.

Typically, the emphasis on appearance and body image as well as the pressure to fit the thin ideal, especially for females, increase during adolescents (Thompson et al., 1999). This can put adolescent females at increased risk of developing body dissatisfaction, which in turn can lead to increases in depressive symptoms. This proposition is supported by findings from Stice et al. (2001), who showed that initial body dissatisfaction, dietary restraint, and bulimic symptoms predicted the onset of depression among initially non-depressed female adolescents over a four-year period. These findings by Stice et al. (2001) are discrepant from those found by Stice and Whitenton (2002). This may be attributable to the fact that participants in the latter study may not have had time to develop depressive symptoms as a result of body dissatisfaction. The current study examined a sample of female undergraduate students with a mean age of 23 years. These women were older than the participants in Stice and Whitenton (2002), which may have allowed enough time for body dissatisfaction to negatively impact mood, as seems to be the case for the Stice et al. (2001) study.

Explanation of Findings Based on Past Literature: Model 2

The similarities between the design of model 1 and model 2 resulted in many of the findings for the two models to be the same; child psychological maltreatment was associated with a negative model-of-self and body dissatisfaction and depression was associated with body dissatisfaction and psychological maltreatment. However, because model 2 did not include perceived social support as a mediator, it yielded an additional finding that was not found in model 1.

A unique finding to model 2 was that a negative model-of-self was associated with greater body dissatisfaction, which is similar to the findings of Cash et al. (2004).

Cash et al. (2004) also found a preoccupied attachment style (negative model-of-self) to have the strongest association with body dissatisfaction followed by a secure attachment. Troisi et al. (2006) reported similar findings, whereby more body dissatisfaction was positively related to an anxious attachment style (negative model-of-self) and separation anxiety symptoms. However, the association between the model-of-self and body dissatisfaction was no longer significant when combined with the other variables in model 2, but this could have been because of low power due to an insufficient sample size.

Additional Findings

The current study did not aim to examine the mediating effect of the model-of-self and model-of-other on the relation between child psychological maltreatment and perceived social support; however, an indirect effect was found from psychological maltreatment to perceived social support through the model-of-self and model-of-other, in model 1. More specifically, because there was a positive association between the model-of-self and perceived social support, and no association between a model-of-other and perceived social support, the findings suggest mediation to occur through only the model-of-self. Thus, individuals who are able to maintain a positive model-of-self after being a victim of childhood psychological abuse will maintain higher perceptions of social support compared to individuals with a negative model-of-self. But, the maintenance of high perceived social support may not help attenuate body dissatisfaction for individuals who have been psychologically abused.

Contribution of Findings to Literature

The current study aimed to identify potential mediators between child psychological maltreatment and body dissatisfaction. Various forms of child maltreatment have been shown to negatively affect the model-of-self, model-of-other and perceived social support (McLewin & Muller, 2006; Muller et al., 2008; Muller & Lemieux, 2000). In turn, a negative model-of-self, negative model-of-other, and deficits in perceived social support have been found to be linked to increased body dissatisfaction (Cash et al., 2004; Stice et al., 2001). Therefore, the model-of-self, model-of-other, and perceived social support were hypothesized to mediate the connection between psychological maltreatment and body dissatisfaction.

The correlational results of current study supported several findings from past research. First, psychological maltreatment was associated with greater body dissatisfaction. Prior to the current study, only a few studies (e.g., Dunkley et al., 2010) had examined and supported this link. Second, empirical evidence was provided for the links between the model-of-self and perceptions of social support, and between the model-of-other and perceived social support, where both a positive model-of-self and positive model-of-other were related to perceptions of more social support resources (Muller & Lemieux, 2000). Third, support was provided for the association between depression and both body dissatisfaction and psychological maltreatment. Fourth, the model-of-self was associated with greater body dissatisfaction, which was congruent with findings by Cash et al. (2004). Finally, perceived social support was associated with greater body dissatisfaction, supporting findings by Stice et al. (2001).

The current study yielded some novel findings that also contribute to the literature. Past research has established a link between psychological maltreatment and an anxious and avoidant attachment style. The current findings extended on past research and provided a link between Bartholomew's two-dimensions of attachment and psychological maltreatment. More specifically, a negative association was found between child psychological maltreatment and the model-of-self and model-of-other.

Both the model-of-self and model-of-other have been found to be associated with perceived social support, but the model-of-self may be a more robust contributor to perceived social support than is the model-of-other. When both the model-of-self and model-of-other were included in model 1, the model-of-self accounted for enough of the variance in perceived social support to render the path from the model-of-other to perceived social support non-significant. In other words, feeling unworthy has a more negative impact on one's perceptions of how forthcoming others will be than is one's assessment of the reliability and availability of others.

Past research had yet to examine the association between child psychological maltreatment and perceived social support, although past research on the effects of a combination of other forms of maltreatment (physical, sexual, and psychological) on perceived social support, could suggest a link between these two variables (Muller & Lemieux, 2000). The current study provided support for a specific association between psychological maltreatment and deficits in perceived social support.

The finding with the greatest novel contribution to the literature was the presence of a mediational effect of the model-of-self on the association between psychological maltreatment and body dissatisfaction. The identification of the model-of-self as a

mediator between psychological maltreatment and body dissatisfaction has therapeutic implications, which will be discussed in the next section.

Implication of Findings

Based on past research we know that body dissatisfaction is a central feature of eating disorders, and is a major contributor to their onset and maintenance (Thompson et al., 1999). In other words, body dissatisfaction is a precursor of eating disorders. Because the current study indicated a link between psychological maltreatment and body dissatisfaction, one may suggest that psychological maltreatment also is related to the development of eating disorders. In addition, we know that psychological maltreatment is the most prevalent form of childhood maltreatment, and may affect as many as one in three individuals (Paivio & Cramer, 2004). This represents a large number of individuals at risk for developing body dissatisfaction. Thus, by identifying mechanisms that are proximal to psychological maltreatment and are related to body dissatisfaction, more timely efforts can be invested in interventions to treat body dissatisfaction in psychologically maltreated individuals.

Clinical Implications. The current study found the inclusion of attachment style and perceived social support to render the association between psychological maltreatment and body dissatisfaction non-significant (model1). However, mediation was only found to occur in model 2, indicating that only the model-of-self mediated the association between psychological maltreatment and perceived social support. This finding has several clinical implications. First, bolstering perceived social support as a protective factor against psychopathology may not be an effective therapeutic approach to prevent or mitigate body dissatisfaction. It was expected that perceived social support

would be a protective factor against body dissatisfaction because it has been shown to be a protective factor against various psychopathology (Cohen & Willis, 1985), which was not the case in the current study.

Second, therapeutic interventions to improve one's perceptions of self-worth may be an effective way to lessen body dissatisfaction among individuals who have been psychologically maltreated. Lessening the degree of body dissatisfaction in individuals who have been psychologically maltreated would decrease susceptibility to developing eating disorders.

Third, the finding that the model-of-self mediates the relation between psychological maltreatment and perceived social support, suggests that improving self-worth in individuals who have been maltreated can help bolster perceptions of social support. The protective benefits of perceived social support against a myriad of psychopathology has been well documented, underscoring the importance of identifying mechanisms that increase perceived social support. Therefore, therapeutic approaches to improve the model-of-self in individuals who have been psychologically maltreated may help prevent or curtail other forms of psychopathology.

Research and Theoretical Implications. Bartholomew proposed that the model-of-self and the model-of-other correspond to the four-dimensional model of attachment (see Figure 1). In addition, research has supported a link between a preoccupied attachment (negative model-of-self) and social support, which was further supported by the current findings. Prior research has mostly examined the four-dimensions of attachment style or the anxious-avoidant attachment dichotomy in research. The current study provided support for the use of the two-dimension model of attachment in place of other

attachment paradigms in attachment research.

The two-dimensional model of attachment represents general expectations about the availability of others and the worthiness of the self; conversely, the four-category model of attachment is conceptualized as prototypic strategies for regulating a sense of security in close relationships. Thus, measuring the two-dimensional model of attachment can be more desirable than the four-category model of attachment when trying to assess general relational expectations of the self and others. Moreover, the concordance between the two-and -four -dimensional models of attachment allow for comparison of attachment types between the two-and-four dimensional models.

Limitations

Several measurement limitations exist in the current study. First, the sample size could have been larger, as model 2 did not satisfy the sample size recommendation by MacCallum et al., (1996). Having a larger sample size could have increased statistical power making it more likely to detect effects within the models, such as between attachment and perceived social support. Specifically, because the path from the model-of-self to body dissatisfaction in model 2 approached significance, $\beta = .10, p = .08$, the inclusion of more participants may have rendered the power of the analysis high enough to detect a significant effect.

Second, the current sample was composed of non-clinical female undergraduate student. Thus, the generalizability of these results is somewhat restricted to comparable female samples. However, the inclusion of only females was an asset of the current study because body dissatisfaction manifests in different ways for each gender, and the inclusion of males would have obscured the interpretability of the results.

Third, there was slight non-normality of the psychological maltreatment measures but because of the nature of the measures positive skewness was expected such that most individuals would report having experienced no more than mild forms of maltreatment. Therefore, those who experienced severe amounts of maltreatment would be identified as statistical outliers. However, they were retained unchanged in the analyses because they were meaningful members of the sample. Furthermore, ML is moderately robust against violations of normality, which would make non-normality less problematic.

Fourth, a more sophisticated method of replacing missing values could have been explored (e.g., Expectation Maximization). The use of a mean substitution to replace missing values can reduce variance, which constrain correlations between variables and increase type I error (Tabachnick & Fidell, 2007).

Fifth, marital or relationship status may have acted as a confounding variable. It is possible that scores on the model-of-self and model-of-other may differ based on relationship status, regardless of experiences of psychological maltreatment. Being in a relationship for a extended period of time may have a beneficial effect on an individual's model-of-self and model-of-other, whereby positive relationship experiences may help alter one's self-worth and perceptions of others, even for individuals who have been psychologically maltreated during childhood. Therefore, individuals who have been in relationships for longer periods of time may show a weaker negative association between childhood psychological maltreatment and the model-of-self and model-of-other.

Sixth, high measurement error may have slightly biased the effects of the variables by underestimating or overestimating certain pathways in the proposed models. Specifically, the internal consistency for the RSQ subscales was found to be mostly less

than adequate ranging from .49 to .77. As previously discussed, the low internal reliability of the RSQ may have reduced the effectiveness of the models to detect a mediation effect of the model-of-self and the model-of-other, and perceived social support on the relation between psychological maltreatment and body dissatisfaction in model 1, and may have underestimated the mediation effect found in model 2 (Baron & Kenny, 1986). However, SEM adjusts the pathways between the variables, which attenuates for bias due to error.

Future Directions

The absence of mediation in model 1 highlights several directions for future research. First, because of the high measurement error in the RSQ, the true mediating effect of the model-of-self and the model-of-other, and perceived social support on the relation between psychological maltreatment and body dissatisfaction cannot confidently be determined. In addition, the strength of mediation in model 2 may have been underestimated. Thus, both model 1 and model 2 should be replicated with a more reliable measure of attachment style to reduce type I and type II error. The replication of the current models with a more reliable measure of attachment may elucidate novel and stronger associations between the proposed constructs.

The finding of an indirect effect from psychological maltreatment to perceived social support through the model-of-self in model 1 warrants further clarification. Because the path from the model-of-self to perceived social support was significant, and the path from the model-of-other to perceived social support was non-significant, model 1 suggested that mediation was occurring through the model-of-self. However, if the

measurement error in the RSQ was reduced the results might also show an association between the model-of-other and perceived social support.

Testing this model within a clinical sample would be a next obvious step. The elucidation of how the model-of-self, model of other, and perceived social support affect body dissatisfaction in a clinical sample with eating disorders could identify target areas for intervention. It is important to study how these variables interact within a clinical population because longer experiences of the negative impact that accompanies eating disorders may make it more difficult to bolster self-worth to reduce the negative effects of psychological maltreatment on body dissatisfaction.

APPENDICES

APPENDIX A

Demographic Questionnaire

Age: _____ Gender: _____

Height: _____ feet _____ inches

Weight: _____ pounds

Marital Status:

___ Married/common law

___ Single

___ Divorced/separated

___ Widowed

What is your ethnic background?

___ Caucasian ___ South Asian ___ Hispanic

___ African-Canadian ___ European ___ Native-Canadian

___ East Asian ___ Asian

___ Other (please specify): _____

How many years of education have you completed?

School enrolment:

___ Full-time student

___ Part-time student

Years in university:

___ First Year

___ Second Year

___ Third Year

___ Fourth Year

___ More than 4 years

Including your current psychology course(s), how many psychology courses have you taken so far? _____

APPENDIX B

Child Abuse and Trauma Scale

This questionnaire seeks to determine the general atmosphere of your home when you were a child or teenager and how you felt you were treated by your parents or principal caretaker. (If you were not raised by one or both of your biological parents, please respond to the questions below in terms of the person or persons who had the primary responsibility for your upbringing as a child.) Where a question inquires about the behaviour of both of your parents and your parents differed in their behaviour, please respond in terms of the parent whose behaviour was most severe or worse.

In responding to these questions, simply circle the appropriate number according to the following definitions:

- 0 = never
- 1 = rarely
- 2 = sometimes
- 3 = very often
- 4 = always

Please answer all the questions.

- | | | | | | |
|--|---|---|---|---|---|
| 1. Did your parents ridicule you? | 0 | 1 | 2 | 3 | 4 |
| 2. Did you ever seek outside help or guidance because of problems in your home? | 0 | 1 | 2 | 3 | 4 |
| 3. Did your parents ever verbally abuse each other? | 0 | 1 | 2 | 3 | 4 |
| 4. Were you expected to follow a strict code of behaviour in your home? | 0 | 1 | 2 | 3 | 4 |
| 5. When you were punished as a child or teenager, did you understand the reason you were punished? | 0 | 1 | 2 | 3 | 4 |
| 6. When you didn't follow the rules of the house, how often were you severely punished? | 0 | 1 | 2 | 3 | 4 |
| 7. As a child, did you feel unwanted or emotionally neglected? | 0 | 1 | 2 | 3 | 4 |
| 8. Did your parents insult you or call you names? | 0 | 1 | 2 | 3 | 4 |
| 9. Before you were 14, did you engage in any sexual activity with an adult? | 0 | 1 | 2 | 3 | 4 |

10. Were your parents unhappy with each other?	0	1	2	3	4
11. Were your parents unwilling to attend any of your school-related activities?	0	1	2	3	4
12. As a child, were you punished in unusually ways (e.g., being locked in a closet for a long time or being tied up)?	0	1	2	3	4
13. Were there traumatic or upsetting sexual experiences when you were a child or teenager that you couldn't speak to adults about?	0	1	2	3	4
14. Did you ever think you wanted to leave your family and live with another family?	0	1	2	3	4
15. Did you ever witness the sexual maltreatment of another family member?	0	1	2	3	4
16. Did you ever think seriously about running away from home?	0	1	2	3	4
17. Did you witness the physical maltreatment of another family member?	0	1	2	3	4
18. When you were punished as a child or teenager, did you feel the punishment was undeserved?	0	1	2	3	4
19. As a child or teenager, did you feel disliked by any of your parents?	0	1	2	3	4
20. How often did your parents get really angry with you?	0	1	2	3	4
21. As a child did you feel that your home was charged with the possibility of unpredictable violence?	0	1	2	3	4
22. Did you feel comfortable bringing friends home to visit?	0	1	2	3	4
23. Did you feel safe living at home?	0	1	2	3	4
24. When you were punished as a child or teenager, did you feel "the punishment fit the crime"?	0	1	2	3	4

25. Did your parents ever verbally lash out at you when you did not expect it?	0	1	2	3	4
26. Did you have traumatic sexual experiences as a child or teenager?	0	1	2	3	4
27. Were you lonely as a child?	0	1	2	3	4
28. Did your parents yell at you?	0	1	2	3	4
29. When either of your parents was intoxicated, were you ever afraid of being sexually maltreated?	0	1	2	3	4
30. Did you ever wish for a friend to share your life?	0	1	2	3	4
31. How often were you left at home as a child?	0	1	2	3	4
32. Did your parents blame you for things you didn't do?	0	1	2	3	4
33. To what extent did either of your parents drink heavily or abuse drugs?	0	1	2	3	4
34. Did your parents ever hit or beat you when you did not expect it?	0	1	2	3	4
35. Did your relationship with your parents ever involve a sexual experience?	0	1	2	3	4
36. As a child, did you have to take care of yourself before you were old enough?	0	1	2	3	4
37. Were you physically mistreated as a child or teenager?	0	1	2	3	4
38. Was your childhood stressful?	0	1	2	3	4

APPENDIX C

Body Shape Questionnaire

We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and choose the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

	Never	Rarely	Sometimes	Often	Very Often	Always
1. Has feeling bored made you brood about your shape?	1	2	3	4	5	6
2. Have you been so worried about your shape that you have been feeling that you ought to diet?	1	2	3	4	5	6
3. Have you thought that your thighs, hips, or bottom are too large for the rest of you?	1	2	3	4	5	6
4. Have you been afraid that you might become fat (or fatter)?	1	2	3	4	5	6
5. Have you worried about your flesh not being firm enough?	1	2	3	4	5	6
6. Has feeling full (e.g., after eating a large meal) made you feel fat?	1	2	3	4	5	6
7. Have you felt so bad about your shape that you have cried?	1	2	3	4	5	6
8. Have you avoided						

- | | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 8. | Have you avoided running because your flesh might wobble? | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | Has being with thin women made you feel self-conscious about your shape? | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. | Have you worried about your thighs spreading out when you sit down? | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | Has eating even a small amount of food made you feel fat? | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. | Have you noticed the shape of other women and felt that your own shape compared unfavorably? | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. | Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. | Has being naked, such as when taking a bath, made you feel fat? | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. | Have you avoided wearing clothes which make you particularly aware of the shape of your body? | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. | Have you imagined cutting off fleshy areas of your body? | 1 | 2 | 3 | 4 | 5 | 6 |

- | | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 17. | Has eating sweets, cakes, or other high calorie food made you feel fat? | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. | Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape? | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. | Have you felt excessively large and rounded? | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. | Have you felt ashamed of your body? | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. | Has worry about your shape made you diet? | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. | Have you felt happiest about your shape when your stomach has been empty? | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. | Have you thought you are the shape you are because you lack self-control? | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. | Have you worried about other people seeing rolls of flesh around your waist of stomach? | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. | Have you felt that it is not fair that other women are thinner than you? | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. | Have you vomited in order to feel thinner? | 1 | 2 | 3 | 4 | 5 | 6 |

27. When in company have you worried about taking up too much room (e.g., sitting on a sofa or a bus seat)?
- 1 2 3 4 5 6
28. Have you worried about your flesh being dimply?
- 1 2 3 4 5 6
29. Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?
- 1 2 3 4 5 6
30. Have you pinched areas of your body to see how much fat there is?
- 1 2 3 4 5 6
31. Have you voided situations where people could see your body (e.g., communal changing rooms or swimming baths)?
- 1 2 3 4 5 6
32. Have you taken laxatives in order to feel thinner?
- 1 2 3 4 5 6
33. Have you been particularly self-conscious about your shape when in the company of other people?
- 1 2 3 4 5 6
34. Has worry about your shape made you feel you ought to exercise?
- 1 2 3 4 5 6

APPENDIX D

Relationship Scales Questionnaire

Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships.

	Not at all like me		Somewhat like me		Very much like me
1. I find it difficult to depend on other people	1	2	3	4	5
2. It is very important to me to feel independent	1	2	3	4	5
3. I find it easy to get emotionally close to others	1	2	3	4	5
4. I want to merge completely with another person	1	2	3	4	5
5. I worry that I will be hurt if I allow myself to become too close to others	1	2	3	4	5
6. I am comfortable without close emotional relationships	1	2	3	4	5
7. I am not sure that I can always depend on others to be there when I need them	1	2	3	4	5
8. I want to be completely emotionally intimate with others	1	2	3	4	5
9. I worry about being alone	1	2	3	4	5
10. I am comfortable depending on other people	1	2	3	4	5
11. I often worry that romantic partners don't really love me	1	2	3	4	5

12.	I find it difficult to trust others completely	1	2	3	4	5
13.	I worry about others getting too close to me	1	2	3	4	5
14.	I want emotionally close relationships	1	2	3	4	5
15.	I am comfortable having other people depend on me	1	2	3	4	5
16.	I worry that others don't value me as much as I value them	1	2	3	4	5
17.	People are never there when you need them	1	2	3	4	5
18.	My desire to merge completely sometimes scares people away	1	2	3	4	5
19.	It is important to me to feel self-sufficient	1	2	3	4	5
20.	I am nervous when anyone gets too close to me	1	2	3	4	5
21.	I often worry that romantic partners won't want to stay with me	1	2	3	4	5
22.	I prefer not to have other people depend on me	1	2	3	4	5
23.	I worry about being abandoned	1	2	3	4	5
24.	I am somewhat uncomfortable being close to others	1	2	3	4	5
25.	I find that others are reluctant to get as close as I would like	1	2	3	4	5
26.	I prefer not to depend on others	1	2	3	4	5
27.	I know that others will be there when I am in need	1	2	3	4	5

28.	I worry about having others not accept me	1	2	3	4	5
29.	Romantic partners often want me to be closer than I feel comfortable being	1	2	3	4	5
30.	I find it relatively easy to get close to others	1	2	3	4	5

APPENDIX E

Multidimensional Scale of Perceived Social Support

Instructions: we are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Choose "1" if you **Very Strongly Disagree**

Choose "2" if you **Strongly Disagree**

Choose "3" if you **Mildly Disagree**

Choose "4" if you are **Neutral**

Choose "5" if you **Mildly Agree**

Choose "6" if you **Strongly Agree**

Choose "7" if you **Very Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
1. There is a special someone who is around when I am in need	1	2	3	4	5	6	7
2. There is a special person with whom I can share joys and sorrows	1	2	3	4	5	6	7
3. My family really tries to help me	1	2	3	4	5	6	7
4. I get the emotional help and support I need from my family	1	2	3	4	5	6	7
5. I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
6. My friends really try to help me	1	2	3	4	5	6	7
7. I can count on my friends when things go wrong	1	2	3	4	5	6	7
8. I can talk about my							

	problems with my family	1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
10.	There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
11.	My family is willing to help me make decisions	1	2	3	4	5	6	7
12.	I can talk about my problems with my friends	1	2	3	4	5	6	7

APPENDIX F

Participant Pool advertisement

“The Impact of Personal History on Psychological Functioning.”

The goal of this study is to investigate the association between people’s personal history and their psychological functioning. If you volunteer to participate in this study, you will be asked to complete an online survey. Completing all the measures will require approximately 60 minutes. It is very important that you complete this survey in a quiet place, alone, and during a time when you can relax and fully concentrate. Your true thoughts and feelings are important to us and we want to make sure that you complete the survey in a way that makes you able to give us that. This study is available only to University of Windsor students registered in the Participant Pool and only these students will receive research credits in exchange for their participation. You will receive 1 credit in exchange for your participation.

APPENDIX G

Consent Form



CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The relationship between personal history and current psychological functioning.

You are asked to participate in a research study conducted by Michael A. Kong, from the Department of Psychology at the University of Windsor. The results of this study will be used for Michael Kong's Masters thesis.

If you have any questions or concerns about the research, please feel to contact the primary investigator, Michael Kong at (519) XXX-XXXX or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000 ext. XXXX.

PURPOSE OF THE STUDY

The goal of this study is to investigate the relationship between people's personal history and their current psychological functioning.

PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things: To ensure confidentiality, you will first be asked to create a unique access code. You will then have access to complete the on-line survey, which should take about 60 minutes. Please complete the survey in a quiet place where you are able to fully concentrate.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable risks associated with participating in this study. However, if you do experience some discomfort you are also welcome to contact the primary investigator Michael Kong to address any of your concerns.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Participating in this study could provide you with some interesting information and insight about yourself and how you function in various areas of your life. Your participation also will provide the scientific community with information about the various constructs that will be studied.

PAYMENT FOR PARTICIPATION

For completion of the study, you will receive 1 bonus mark to be assigned to an eligible psychology course of your choice.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Your name and student number must be collected at the end of the study for your bonus points to be assigned. Your data will be kept separate from the document containing your name and student number, and will be store in the University of Windsor data servers. The data will be retained for 10 years after which it will be destroyed.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. However, to receive your bonus marks, you will need to complete the survey. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

Research findings for this study are expected to be available to participants in October 2011. Results will be posted on the University of Windsor REB website:
www.uwindsor.ca/reb

Web address: www.uwindsor.ca/reb

Date when results are available: October 2011

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies. However, it will remain completely confidential.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study “The relationship between personal history and current psychological functioning” as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Subject

Signature of Subject

Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

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