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# An investigation of eating disorder behaviour as a means of avoidant coping with romantic stress for women high in self-evaluative salience

Joyce Wing-Yan Yu

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AN INVESTIGATION OF EATING DISORDER BEHAVIOUR AS A MEANS OF  
AVOIDANT COPING WITH ROMANTIC STRESS FOR WOMEN HIGH IN  
SELF-EVALUATIVE SALIENCE

By

Joyce Wing-Yan Yu

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2012

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An Investigation of Eating Disorder Behaviour as a Means of Avoidant Coping with  
Romantic Stress for Women High in Self-Evaluative Salience

By

Joyce Wing-Yan Yu

APPROVED BY:

---

K. Gorey  
Department of Social Work

---

P.A. Timmons Fritz  
Department of Psychology

---

J. L. Jarry, Advisor  
Department of Psychology

---

J. Singleton-Jackson, Chair of Defense  
Department of Psychology

11 December 2012

## DECLARATION OF ORIGINALITY

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## ABSTRACT

Multiple factors contribute to the onset of eating disorders (EDs). Romantic stress is thought to be salient due to the importance of appearance in romantic attraction. Avoidance of stress has been specifically correlated to EDs. Avoidant coping is thought to potentiate effects of romantic stress, but only for individuals who base their self-worth on their appearance. This is the first study to investigate the association between avoidant coping style, romantic stress, basing self-worth on one's appearance, and the impact of these factors on the outcome variables of ED symptom severity, ED attitudes, and body dissatisfaction. Three hundred female undergraduates completed an online questionnaire. As predicted, avoidant coping was positively correlated with ED attitudes, and increased self-evaluative salience and elevated romantic stress led to the highest levels of ED attitudes. Contrary to predictions, this non-clinical sample did not engage in disordered eating behaviour as a means of avoidant coping.

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## CHAPTER I

### INTRODUCTION

#### **The Importance of Understanding Eating Disorders**

Eating disorders (EDs) are amongst the most chronic and prevalent psychiatric disorders (Stice & Shaw, 2002). Anorexia nervosa (AN) has a lifetime prevalence of approximately 0.5%, and bulimia nervosa (BN) affects 1-4% of the population over their lifetime (4<sup>th</sup> ed., text rev.; *Diagnostic and Statistical Manual of Mental Disorders*, American Psychiatric Association, 2000). However, the prevalence of EDs not otherwise specified (ED-NOS) is considered to be much higher than the two other DSM-IV-TR categories, though the population prevalence remains unclear (Eddy, Keel, & Leon, 2010). Half of all individuals who seek treatment for an eating disorder are diagnosed with ED-NOS (Fairburn et al., 2007). A prominent subsection of ED-NOS are the binge eating disorder (BED) diagnoses, which have a lifetime prevalence of 2.3-6.6% in international samples of women (Gotestam & Agras, 1995; Machado, Machado, Goncalves, & Hoek, 2007; Spitzer et al., 1992). In an undergraduate female population, researchers have found that the prevalence of subclinical levels of eating disorder symptomatology ranges from 23-30% (Mintz, O'Halloran, Mulholland, & Schneider, 1997). Past research has supported that EDs occurs mostly in women with 90% of the clinical diagnoses assigned to women and girls (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). As a whole, women tend to be more dissatisfied with their appearance (Fallon & Rozin, 1985), and may thus be more inclined to engage in activities and behaviour aimed at improving their appearance, including ED behaviour.

The onset of EDs typically occurs early in the lifespan, with AN beginning during adolescence and BN beginning in late adolescence or early adulthood (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). BED has an average age of onset of 25 years (Hudson, Hiripi, Pope, & Kessler, 2007). The mortality rate of EDs is also one of the highest of the common psychiatric disorders (Newman et al., 1996), with over 10% of individuals hospitalized for AN eventually dying as a result of their ED (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). In summary, EDs are prevalent, chronic, and have a high mortality rate. As such, it is crucial to understand EDs in order to provide optimal treatment and reduce negative outcomes, especially considering its prevalence, persistence, and chronic nature (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000).

### **Stress as a Precipitating Factor for Eating Disorders**

Past research has shown that multiple precipitating factors contribute to the onset of EDs, and that individuals who exhibit a higher number of risk factors are at substantially higher risk of developing clinical levels of ED symptomatology (Ghaderi, 2003). Risk factors include, but are not limited to: low self-esteem, high body concerns, high avoidant coping, negative affect, and elevated stress (Ghaderi, 2003; Stice, 2002).

Specifically, clinical research supports a relationship between stress and ED symptomatology. Stress is defined as any stimulus which changes an individual's normal mood state when at rest, usually accompanied by changes in the individual's physiological homeostasis (Burchfield, 1979). Past studies of clinical ED samples have found that the presence of stress correlated with higher bingeing frequency in individuals with BN (Tuschen-Caffier & Vogele, 1999) and in restrained eaters who did not meet

criteria for an ED (Tanofsky-Kraff, Wilfley, & Spurrell, 2000). A retrospective study of a clinical BN sample found that most individuals reported perceived life stressors prior to symptom onset (Lacey, Coker, & Birtchnell, 1986). ED-diagnosed women also tend to view a stressor as more threatening and stressful than non-clinical controls (Crowther, Sanftner, Shepherd, & Bonifazi, 2001), further emphasizing the connection between stress and eating disorders. In a study by Engler, Crowther, Dalton, and Sanftner (2006) which compared individuals who recently engaged in binge eating with individuals who exhibited chronic patterns of binge eating and individuals who did not engage in binge eating, the authors found that individuals who had recently engaged in a binge reported the highest levels of stress in the period immediately preceding the binge. Individuals in the recent binge eating group also reported higher levels of stress as compared to individuals who reported no binges. Thus, it can be concluded that clinical research supports a relationship between stress and ED symptomatology.

A review of longitudinal studies suggested that elevations in perceived stress precede ED onset in community samples (e.g., Sherwood, Crowther, Wills, & Ben-Porath, 2000). In one study, onset of clinical levels of ED symptoms was preceded by stressful events in 76% of cases (Bloks, Spinhoven, Callewaert, Willemse-Koning & Turksma, 2001). In another study comparing women who were diagnosed with bulimia nervosa, women with subclinical symptoms of bulimia, and non-clinical controls, women diagnosed with bulimia reported a greater frequency of perceived negative events than the other two groups, greater levels of avoidant coping during those negative events, and the highest levels of binge eating at the time of negative events (Sherwood et al., 2000). Elevated stress levels are theorized to precipitate ED symptoms, including appetite

disturbance, as the individual attempts to establish control through restricting alternate areas of their lives when a stressor is out of their control (Cattanach & Rodin, 1988).

The frequency of stressful events in an individual's life has also been supported as a risk factor for eating disorders. Stress occurs concurrently with disordered eating (Rosen, Compas, & Tacy, 1993), and if an individual experiences elevated stress over prolonged periods, there is a greater risk for onset of EDs (Lo Sauro, Ravaldi, Cabras, Faravelli, & Ricca, 2008). For example, Pike et al. (2006) found that stressful life event frequency was significantly elevated for individuals later diagnosed with an ED in the year prior to ED symptom onset, relative to individuals who were not diagnosed with an ED. Multiple longitudinal studies have also supported stress as a temporal precedent and a contributing factor to eating disorders. These findings are summarized in the cumulative stressor model, which proposes that when there are pre-existing factors that make an individual vulnerable (i.e., body dissatisfaction) and a sufficient number of immediate threatening stressors, ED onset can be triggered (Smolak, Levine, & Gralen, 1993). As such, stress is both a risk factor and a precipitating factor for EDs, and when elevated over time, will contribute to the maintenance of ED symptomatology.

### **Relevance of Romantic Stress to Eating Disorders**

Past studies have focused on the general measurement of perceived stress at a specific time point (i.e., Ball & Lee, 2002; Bennett & Cooper, 2001; Louis, Chan, & Greenbaum, 2009; Weinstein, Shide, & Rolls, 1997). In other words, they have focused on how stressed an individual generally feels at the point of the survey or at the point in time the survey references. Although such measurement can accurately assess an



individual's general state of mind, it does not accurately assess the source of the stressors or the varying impact of stress from different sources.

Research suggests that different life domains (i.e., academics, parental relationships, romantic relationships, peers) have varying prominence in an individual's life. In a survey of priorities, Bowling (1995) found that interpersonal relationships (i.e., family, relatives, significant other) were most commonly reported as the most important priority, above religion, finances, and work. Research has shown that individuals tend to place a particularly high value on romantic attachments and relationships (Seiffge-Krenke, 2006). Notably, women are more likely to base their self-worth and value on their relationships (McGuire & McGuire, 1982, as cited in Oliver, Huon, Zadro, & Williams, 2001).

Stress in romantic relationships can be defined as encompassing all forms of stress stemming from a romantic attachment, and from both the initiation and maintenance of such a relationship (Furman, Simon, Shaffer, & Bouchey, 2002). One possible source of romantic stress is appearance. Appearance is a central element of romantic attraction (Smith, Waldorf, & Trembath, 1990), and women with a more positive body image, and thus greater satisfaction with their current physical state, tend to report a higher quality and quantity of romantic encounters (Nezlek, 1999). In the mass media, images of attractive females are a source of social comparison for women (Jones, 2001), and men who were exposed to these images report decreased attraction and love for their female romantic partner (Kenrick, Guterres, & Goldberg, 1989). A more recent study has suggested that if a man were to become less satisfied with his female partner's

body, this would predict an increase in the woman's drive for thinness (Morrison, Doss, Perez, 2009). Thus, romantic stress may be linked to perceived insufficient thinness.

Thinness is generally equated to attractiveness in modern-day Western culture (Mori, Chaiken, & Pliner, 1987), and attractiveness is associated with popularity, success in romantic relationships, and greater opportunities in life (Deaux & Hannah, 1984). As such, women experiencing elevated romantic stress may attribute their romantic stress to the perception that they are insufficiently attractive, especially if they believe that men evaluate their attractiveness in the same manner (Szymanski & Cash, 1995). Specifically, if a woman perceives that her romantic partner views her body negatively, relationship satisfaction decreases and relationship outcomes are more negative (Morrison et al., 2009). Therefore, romantic stress may act as a risk factor for EDs in women who attribute this stress to insufficient attractiveness and/or thinness.

### **How Coping Style affects the Impact of Stress**

Each individual may react to stress differently; one factor that affects individual stress responses is coping style. Coping is the multi-faceted process of cognitive, emotional, physical, and mental responding to stimuli perceived to be stressful (Lazarus, 1993). One of the most dominant coping style distinctions in modern research involves avoidance and approach coping styles. In broad terms, approach coping is defined as acting directly on the stressor and its resultant emotions whereas avoidant coping is defined as attempting to escape the stressor and its corresponding emotions (Skinner, Edge, Altman, & Sherwood, 2003). Approach coping, which includes problem-focused coping and more adaptive aspects of emotion-focused coping, involves attempts to control a stressor and efforts to adjust to the presence of a stressor (Morling & Evered,

2006). Approach coping is considered to be more adaptive than avoidant coping, allowing for focus and progress toward solving the problem and stressor at hand, whereas avoidant coping is considered maladaptive, and is defined as engaging in an unrelated task when faced with a stressor (Endler & Parker, 1990a). Avoidant coping also involves focusing on alternative stimuli in order to avoid aversive affect from the initial threat (Spoor, Bekker, Van Strien, & van Heck, 2007).

For many stressors, prolonged avoidance will lead to greater difficulty in dealing with the stressor once it can no longer be avoided, and may exacerbate consequences related to the stressor over that period of time (Carver & Connor-Smith, 2010). Nevertheless, the negative reinforcement provided in immediately avoiding and minimizing negative affect reinforces continued avoidance (Cash, Santos, & Williams, 2005). However, because the goal of coping is to avoid or minimize the negative impact and harm associated with stress, avoidant coping is considered to be maladaptive, as it accomplishes the opposite in the long-term (Carver & Connor-Smith, 2010).

As a whole, avoidant coping is maladaptive and leads to negative outcomes (Holahan & Moos, 1987). Its use in the long term predicts higher rates of psychopathology and negative outcomes, including anxious and depressive affect (Moskowitz, Hult, Bussolari, & Acree, 2009), lower quality of life (Grylli, Wagner, Hafferl-Gattermayer, Schober, & Karwautz, 2005), and psychological distress, as well as negative psychological adjustment (Conradt et al., 2008). More saliently to the present discussion, avoidant coping is associated with higher rates of ED symptoms and diagnosis frequency (VanBoven & Espelage, 2006), as well as a greater degree of disordered eating attitudes (Garcia-Grau, Fuste, Miro, Saldana, & Bados, 2002).

## **Empirical Review of Coping Style and Stress**

Coping style is a general term encompassing specific coping strategies or actions that belong to a specific style of coping, and is thought to remain consistent and relatively static across situations and time (Powers, Gallagher-Thompson, & Kraemer, 2003).

Specific coping strategies are relatively more dynamic, and involve responses to particular circumstances (Skinner et al., 2003). Coping strategies can be grouped under a specific style (i.e., avoidance) depending on the intention behind the coping strategy.

Further, only voluntary and conscious responses to stress are considered coping, which is different from autonomic arousal and more automated stress responses (Cramer, 2003).

With reference to the immediate gratification of the avoidant coping style, it has been found that the short-term efficacy of a coping style will reinforce its use, regardless of its long term impact (Lengua, Sandler, West, Wolchik, & Curran, 1999).

Lazarus and Folkman (1984) were the first to make a distinction between coping styles when they differentiated problem-focused coping from emotion-focused coping. Respectively, these were conceptualized as directing one's efforts towards minimizing the stressor and minimizing negative affect that was generated by the stressor (Lazarus & Folkman, 1984). However, research has found that problem-focused and emotion-focused coping styles are interrelated and inter-perpetuating, to the extent of being complementary aspects as opposed to distinct types of coping (Lazarus, 2006). The interrelation between problem-focused and emotion-focused coping led to the distinction between the approach and avoidant coping styles, also conceptualized as engagement and disengagement (Skinner et al., 2003).

Conceptually, a distinction can be made between avoidant coping through social distraction and avoidance through task distraction. Horowitz et al. (2001) posited that the use of social diversion is the more adaptive of the two, as the use of social diversion may be indicative of higher levels of social support, which is considered a protective factor against psychopathology, including ED. As such, there is merit to considering social distraction as a separate factor in the coping process, given its interrelation with the protective factor of social support (Bennett & Cooper, 1999). Avoidance through task distraction, however, is correlated with maladaptive effects and psychopathology, including EDs (Horowitz et al., 2001). For the purposes of the present investigation, all further references to avoidant coping will involve the task distraction aspect, as opposed to social distraction.

Past coping research has repeatedly emphasized the role of avoidant coping style in potentiating stress levels. As previously mentioned, the avoidance of threats is related to increased stress, as said stress is not reduced in the long term when the existence or impact of a threat is not dealt with (Carver & Connor-Smith, 2010). The use of avoidant coping may promote a contrary increase in intrusive thoughts about the stressor and negative affect related to the stressor, in spite of the individual's attempts to avoid the stressor (Najmi & Wegner, 2008).

Similar results have been found concerning romantic stress. In a sample of students who had recently dissolved a romantic relationship, the tendency towards avoidant coping was associated with PTSD symptoms and depression (Chung et al., 2003). Bennett and Cooper (2001) also found that individuals displaying sub-clinical levels of ED symptomatology tended to report a higher degree of avoidant coping and

experienced greater levels of perceived stress as compared to dieting individuals. Past studies have supported the relation between the constructs of avoidant coping and stress, including how both factors contribute to the initiation and maintenance of ED.

### **Avoidant Coping Style and Eating Disorders**

Avoidant coping style has been found to co-occur and correlate with clinical ED diagnoses and high non-clinical levels of ED symptomatology (Villa et al., 2009; Weller & Dziegielewski, 2004). Avoidant coping also tends to be the dominant coping style for individuals with both clinical (Troop, Holbrey, & Treasure, 1998) and sub-clinical EDs (Koff & Sangani, 1997). In a study comparing clinically diagnosed women with BN, women who recovered from BN, and a control group of women with no previous ED diagnosis, the women with bulimia displayed significantly higher levels of avoidance and disengagement and lower levels of more adaptive approach coping styles than the other two groups (Yager, Rorty, & Rossotto, 1995). More compellingly, women who had completely recovered from bulimia in both behaviour and mental/emotional aspects showed no difference in the use of adaptive or maladaptive coping styles in comparison with the women in the control group (Yager et al., 1995). Comparatively, women with only behavioural recovery from bulimia used avoidant coping at an intermediate frequency between the diagnosed and fully recovered groups (Yager et al., 1995). Yager et al. (1995) theorized that ED symptomatology was related to, or a form of avoidant coping, when training in approach coping was associated with reduced ED symptomatology in diagnosed individuals. ED recovery was also associated with a reduction in the maladaptive coping style (Yager et al., 1995).

Avoidant coping has also been found to precede ED onset in various longitudinal studies. In a longitudinal study by Bloks et al. (2001) which assessed inpatients in treatment for AN and BN at admission, discharge, and a six-month follow-up, avoidant coping style and strategies were reported to precede active engagement of ED symptomatology. The patients in this study exhibited a predominantly avoidant coping style upon admission, and reduced levels of avoidant coping style were related to reductions in ED symptomatology after treatment (Bloks et al., 2001). However, at discharge and follow-up, individuals who were previously at clinical levels of ED symptoms maintained higher levels of avoidant coping style compared to a control group with no ED diagnosis (Bloks et al., 2001). The association between avoidant coping and EDs was further supported in a study of a non-clinical population in which non-clinical individuals who exhibited a predominantly avoidant coping style reported higher levels of disordered eating attitudes over time than non-clinical individuals who did not engage in avoidance (Corstorphine, Mountford, Tomlinson, Waller & Meyer, 2006). Although individuals diagnosed with EDs exhibited the highest use of avoidant coping (Bloks et al., 2001), there was also a positive correlation between avoidant coping style and disordered eating in non-clinical individuals (Bloks et al., 2001; Corstorphine et al., 2006).

A daily diary study by Sherwood et al. (2000) provided further support for the temporal precedence of avoidant coping to ED symptomatology. Clinical BN, subclinical BN, and control participants recorded their food consumption, frequency of negative events, use of various coping strategies and styles, and their affect prior to and following food consumption (Sherwood et al., 2000). The study showed that women diagnose with

bulimia reported a greater frequency of perceived negative events, greater levels of avoidant coping during those negative events, and higher levels of subsequent binge eating compared to women with subclinical BN symptoms and healthy controls (Sherwood et al., 2000). In summary, multiple studies support the proposition that women use avoidant coping prior to engaging ED behaviour.

Concurrent treatments of coping methods and ED have been associated with decreased ED symptomatology, alongside declines in maladaptive coping (Yager et al., 1995), while ED treatment alone preceded simultaneous reduction in both ED symptomatology as well as avoidant coping (Bloks et al., 2001). Individuals who maintained their recovery and avoided relapse also exhibited lower levels of avoidant coping, while utilizing more adaptive methods of dealing with stressors (Bloks, Van Furth, Callewaert, & Hoek, 2004).

Individuals affected by EDs may engage in the pursuit of thinness through disordered eating as a means of avoiding the initial stressor that triggered the coping mechanism, in favour of focusing on their appearance, which may be perceived as more controllable (Atlas, 2004). A common theory is that individuals use disordered eating as a means of coping by avoiding issues that are perceived as more threatening and less controllable, including interpersonal conflicts (Cain, Bardone-Cone, Abramson, Vohs, & Joiner, 2008; McManus & Waller, 1995). Clinical writing further suggests that the primary avoidant coping strategy used by individuals with EDs may be a focus on appearance, an area of personal value, in lieu of focusing on the stressor at hand. Disordered eating may both assuage negative emotions (Wardle, Waller, & Rapoport, 2002) and be utilized to help achieve an ideal body mass and shape (Grogan, Williams, &



Connor, 1996). However, the discrepancy between one's physical body and the thin ideal typically leads to body dissatisfaction (Fallon & Rozin, 1985). When there is elevated body dissatisfaction, pursuing thinness through methods consistent with ED symptomatology may serve as a more appealing alternative focus for individuals attempting to cope with stressors perceive as more challenging. This is especially pertinent in individuals who place a high value in their appearance, and thus may have a stronger tendency to use ED symptomatology to maintain a perceived important interest in their lives, in lieu of dealing with an initial threatening stressor. These actions may be consciously or subconsciously justified by the individual as devoting attention to an equally crucial area of interest – their appearance – while the triggering stress is avoided. Thus, it can be argued that ED symptomatology is a form of avoidant coping.

### **Connecting Coping Style, Stress, and Eating Disorders**

As mentioned above, ED symptomatology can be construed as an avoidant coping strategy (McManus & Waller, 1995). Avoidant coping provides short-term minimization of negative affect (Cash et al., 2005) but long term negative outcomes, including depressive affect (Moskowitz et al., 2009). In a similar manner, ED symptomatology, especially bingeing, leads to reductions in negative affect following a binge (Wardle et al., 2001) but elevation of negative affect in the long term (Cooper et al., 1988). Research further supports that the symptoms of ED-diagnosed individuals who use avoidant coping will exacerbate when faced with increased levels of stress. As previously mentioned, women diagnosed with BN have been found to use avoidant coping more frequently than non-clinical controls (Soukup, Beiler, & Terrell, 1990), and clinically diagnosed women rate similar stressors as more stressful than controls (Crowther et al., 2001), which may

factor into increased stress levels potentiating ED symptomatology (Sherwood et al., 2000). For individuals in the non-clinical population, coping through avoidance when stress is elevated will lead to a host of negative outcomes, including increased ED symptomatology (Weller & Dziegielewski, 2004), more disordered attitudes towards eating (Garcia-Grau et al., 2002), and higher weight dissatisfaction (Ball & Lee, 2002). As such, the evidence in past studies suggests a connection between stress, avoidant coping style, and ED, such that individuals who use ED symptoms as a means of avoidant coping with stress will exhibit further elevation of the ED symptoms when facing greater stress.

### **Appearance Investment and its Relevance to Eating Disorders**

Although a relationship between stress and EDs can be supported, not all individuals react to stressors through EDs or ED symptomatology. Given that dissatisfaction with one's appearance is a primary maintenance and initiating factor of EDs (Thompson, Heinberg, Altabe, & Tautleff-Dunn, 1999), the subset that would react and perhaps cope with stress through ED symptomatology and the pursuit of thinness logically would include individuals for whom appearance is important.

As previously stated, avoidant individuals cope through focusing on unrelated tasks when faced with a threatening stressor, engaging instead in activities which relieve the negative affect caused by the initial stressor (Skinner et al., 2003). Coping with a stressor through modifying one's appearance would be classified as avoidance (Carver & Connor-Smith, 2010), and individuals who place a high value on their appearance will naturally invest greater time and effort in it (Cash & Labarge, 1996), perhaps to the extent of engaging in appearance management in lieu of focusing on an undesirable stressor.

Individuals may engage in such behaviour in accordance with media propagation of an unrealistically thin ideal (Groesz, Levine, & Murnen, 2002). Thus, those with a greater investment in their body image may also have a greater likelihood of focusing on appearance as a means of coping. The individuals may unconsciously avoid the initial stressor, through investing themselves in another area of importance to them, specifically, their appearance.

As a whole, one's body image encompasses both perceptions and attitudes regarding one's appearance (Cash, Melnyk, & Hrabosky, 2004a). Conceptually, body image investment is defined as the degree to which one's body image is valued (Cash & Pruzinsky, 2002). Body image investment can be divided into two main constructs; self-evaluative salience, the importance placed in one's appearance and its value to one's self-worth, and motivational salience, the degree to which one invests effort into their appearance in order to maintain a specific standard of attractiveness (Cash & Grasso, 2005). Elevation of motivational salience is not necessarily maladaptive, as the individual may aim only to maintain a certain standard of appearance (Ip & Jarry, 2008). However, motivational salience is associated with decreased quality of life when extremely elevated (Cash et al., 2004a). Self-evaluative salience is considered the more maladaptive of the two types of body image investment, with elevation of this construct associated with greater body dissatisfaction and internalization of societal thin ideals (Cash et al., 2004a).

The construct of self-evaluative salience is essential for differentiating individuals who may resort to ED behaviour in order to cope with stress, as not all avoidant individuals engage in ED behaviour. It can be theorized that individuals for whom appearance is a central dimension of self-worth are at a higher risk of resorting to ED

behaviour as a means of coping. This increased risk can be attributed to the value that individuals at risk for EDs place on their appearance, and to the need to assert control over an important component in their life (Slade, 1982), when facing an alternate stressor they feel they cannot control, and thus, avoid. Individuals who are elevated in self-evaluative salience perceive appearance to be essential in generating rewarding social and emotional experiences (Cash, 2005), and as such, would be more motivated to maintain or enhance their appearance. Thus, individuals who place a greater value on and are more invested in their appearance are also more likely to focus on their appearance as a means of avoidant coping through engaging in ED behaviour.

As previously stated, EDs primarily affect women and girls, with 90% of clinical diagnoses assigned to women (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). Further, appearance investment manifests differently in men compared to women. Although men have a comparable prevalence of negative body image attitudes compared to women (Cash & Green, 1986), women tend to have higher levels of dissatisfaction with their appearance, possibly because they are more likely to compare their perceived appearance with their disparate internal ideals (Fallon & Rozin, 1985). Men are more vulnerable to media portrayals of a muscular bodily ideal, and report increased body dissatisfaction and decreased self-esteem after exposure (Agliata & Tantleff-Dunn, 2004), whereas women experience a similar effect with media portraying the thin ideal (Hargreaves & Tiggemann, 2002). This may be attributed to women viewing their bodies as a means of attracting others (Stephens, Hill, & Hanson, 1994), with attractiveness considered a core factor in romantic success (Ambwani & Strauss, 2007).

### **Why would this lead to Eating Disorders?**

In summary, past clinical writings suggest that some individuals with EDs focus on appearance control as an avoidant coping strategy when faced with other sources of stress. Cain et al. (2008) theorized that women who felt incapable of coping with a specific stressor might focus on flaws in their own bodies as something they can assert control over and change, in lieu of dealing with issues they feel they cannot control, including interpersonal issues. Stressful interpersonal events (Tobin & Griffing, 1996), as well as interpersonal difficulties and insecurity (Cash, Theriault, & Annis, 2004b) precede disordered eating in clinical samples, and engagement in ED behaviour allows for temporary reduction in negative affect, similar to other avoidant coping strategies (Neziroglu, Khemlani-Patel, & Veale, 2008).

Further, ED behaviour is considered by ED-diagnosed individuals to be a means of managing one's appearance, even though it is maladaptive and has well-documented negative effects and outcomes, including conditions associated with starvation, depressive symptoms, and anxiety (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). This was supported in a study by Atlas (2004), where women diagnosed with both AN and BN held the expectancy that engaging in dieting and appearing thin would predict general self-improvement, an attitude which in turn predicted further potentiation of ED symptomatology. As previously stated, women are likely to primarily view their body as a means of attracting others (Stephens et al., 1994), with thinness equated to attractiveness (Rodin, Silberstein, & Striegel-Moore, 1985). Given the role of appearance in romantic relationship stress, people with high self-evaluative salience encountering romantic stress may be even more likely to use

appearance as a coping strategy, and to increase the severity and frequency of ED behaviours as a means of avoiding and coping with the stressor. This is especially pertinent for those who primarily use avoidant coping strategies, as such strategies tend to prolong and perhaps magnify the stressor (Carver & Connor-Smith, 2010). As such, it can be theorized that individuals with high self-evaluative salience, who dominantly engage in avoidant coping and report high levels of romantic stress will be the most likely to focus on their appearance as a means of avoidant coping when face with romantic stress. It is hypothesized that these same individuals will report the highest levels of ED symptoms, ED attitudes, and body dissatisfaction.

### **The Present Study**

The aim of the present study was to provide support for ED symptomatology as a form of avoidant coping for individuals who place a high value on their appearance and have an avoidant coping style. This was accomplished by investigating aspects of ED behaviour (ED attitudes, ED symptoms, and body dissatisfaction) and how each were affected by the combination of self-reported romantic stress, self-evaluative salience, and avoidant coping style.

In order to prevent spurious statistical relationships and avoid potential confounds in the present study, covariates were measured and included in the model where significant. Past studies have shown that body mass index (BMI), relationship satisfaction, self-esteem, depression, and anxiety co-vary with the variables of interest in the present study. Body image and dissatisfaction have been closely linked with self-esteem, where an individual's body satisfaction has been found to fluctuate based on his or her self-esteem (Ghaderi, 2001). Eating disorders are also commonly co-morbid with

depression, such that those with ED also tend to report higher depressive affect (Lewinsohn, Striegel-Moore, & Seeley, 2000), which may be a by-product of body dissatisfaction and ED symptoms (Stice, Spangler, & Agras, 2001; Weiss & Ebert, 1983). Anxiety and depressive affect were also both common by-products of perceiving and coping with stress (Hinrichsen, Wright, Waller, & Meyer, 2003). Further, BMI is commonly positively associated with dietary restraint (Mills & Miller, 2007) and body dissatisfaction (Wojtowicz & von Ranson, 2012). Relationship satisfaction negatively correlates with ED symptomatology (Markey, Markey, & Birch, 2001), and has been positively correlated with body satisfaction (Friedman, Dixon, Brownell, Whisman, & Wilfley, 1999). The five constructs of self-esteem, anxiety, depressive affect, body-mass index, and relationship satisfaction served as covariates in the present study. The goal of the present study was to examine the role of romantic stress, coping style, and body image investment on ED symptom severity and frequency, including body satisfaction.

### **Hypotheses**

1. Avoidant coping will have a stronger relationship than task-oriented, emotion-oriented, or social coping to ED symptoms and attitudes, as well as to body dissatisfaction.
2. Elevated levels of avoidant coping, romantic stress, and self-evaluative salience will interact to predict levels of ED symptoms and attitudes, as well as body dissatisfaction. Individuals who predominantly cope through avoidance and place a high value on their appearance will focus on managing their appearance by engaging in ED symptoms, when threatened with the highly relevant stressor of

romantic stress, compared to individuals who predominantly utilize alternate styles of coping or who place less value on their appearance.



## CHAPTER II

### METHODS

#### **Design**

This study used a series of hierarchical and custom model GLM multiple regressions in order to test the independent variables (IVs) of self-evaluative salience, avoidant coping, and romantic stress, against the dependent variables (DVs) of ED attitudes, ED symptoms, and body dissatisfaction. The covariates of body mass index (BMI), relationship satisfaction, depression, self-esteem, and trait anxiety were considered independent variables in this analysis to account for their influence on the dependent variables. Hierarchical regressions were used to test Hypothesis 1, comparing the effect of coping styles for each of the DVs, whereas custom model GLM multiple regressions were used to test for the presence of a three-way interaction for each of the DVs. In situations where covariates did not significantly contribute to the model, they were removed from the regression, and the regression was subsequently re-run. At least two covariates significantly contributed to the model in each regression. This study was approved by the University of Windsor Review and Ethics Board.

#### **Participants**

A total of 300 women enrolled in undergraduate psychology courses at the University of Windsor participated in the present study. Assuming a medium effect size and power of 0.80, approximately 76 participants were required for each of the three IV, for a total of 228 participants (Cohen, 1992). According to Cohen (1992), a medium effect size is an effect visible to a careful observer, and is the average size of observed effects across many fields, including psychology. To allow for omitted measures and

incomplete data, as well as adequate power to potentially detect a three-way interaction, 300 participants were included in this study. Although it would be ideal to have adequate power to detect a small effect size, it would be unreasonable to recruit 547 participants for each of the three IV (a total of 1641 participants) in the four month period of this study. Participants were recruited from the University of Windsor Participant Pool over the course of one academic semester, beginning in January 2012 and ending in March 2012. The Participant Pool is an online website hub where undergraduate students who are registered in participating courses are able to sign up and participate in research studies held by the department of Psychology. Students are able to sign up for time slots in selected studies based on their answers to qualifying questions provided by the researchers and the Participant Pool. Upon completion of each study, researchers will assign bonus points to the undergraduate, which the student can apply as bonus percentage points to the grade of any participating course of their choosing.

Students who signed up for the Participant Pool were asked to respond to four screening questions to determine their eligibility for participation in the present study. Participants were asked, “Are you currently in a romantic relationship?” and “If Yes, has this relationship lasted more than one month?” with the response options (*yes*) and (*no*) for both questions. Participants also were asked, “What is your gender?” with the response options of (*female*), (*male*), and (*transsexual*). Finally, participants were asked, “What is your sexual orientation?” with the response options of (*heterosexual*), (*gay/lesbian*), and (*bisexual*). Only female heterosexual respondents who were currently in a romantic relationship lasting more than a month in duration were able to view, consent to, and sign up for the present study on the Participant Pool website (see Appendix A). Past research

has used the one month milestone in a relationship as a standard for recruiting individuals who are in romantic relationships (Feeney & Noller, 1991; Metts & Cupach, 2006). As noted in the literature review, the purpose of disordered eating is different for men and women; men usually wish to become more muscular and larger (Agliata & Tantleff-Dunn, 2004), whereas women typically pursue thinness (Hargreaves & Tiggemann, 2002). Therefore, to maintain the interpretability of the data, only women were recruited for this study. To ensure adequate sample size for valid statistical analyses, only heterosexual women were recruited. Participants received course credit for their participation in university courses which provide research credit.

The mean age of participants was 21.59 years ( $SD = 4.42$ ), with ages ranging from 18 to 50 years. The self-reported relationship status of the participant sample was as follows: 88.2% dating, 4.4% engaged, 4.4% married, 3.0% common-law. Mean relationship length of the participants was 28.92 months ( $SD = 34.71$ ), with durations ranging from 1 month to 310 months. The self-reported ethnicity distribution of the participant sample was: 77.7% Caucasian, 9.7% European, 4.7% Asian, 3% African-Canadian, 2.7% East Asian, 0.7% Hispanic, 0.3% Native American, 4% other, and 3% reported two or more ethnic backgrounds. In terms of education level, 16.6% of the participants were in their first year of undergraduate studies, 23.6% were in their second year, 31.4% were in their third year, 22.3% were in their fourth year, and 6.1% were in at least their fifth year of study.

BMI was calculated for participants based on self-reported height and weight. Past research has found that online and paper means of self-reporting BMI have a high level of agreement (Luce et al., 2007), thus supporting the validity of BMI calculated

through an online self-report. Based on BMI classifications established by the World Health Organization (2000), 6.8% of participants were underweight (BMI <18.5), 69.2% of participants were in the normal weight range (BMI = 18.5 to 24.9), 17.9% of participants were overweight (BMI = 25.0 to 29.9), and 6.1% of participants were obese (BMI  $\geq$  30). Data collected between 2007 and 2009 by Statistics Canada indicated that women in the general Canadian population aged 18 to 39 were distributed such that 5.0% were underweight, 52.4% were in the normal weight range, 22.9% were overweight, and 19.7% were obese (Canadian Health Measures Survey, 2010). As such, the sample in the present study has a comparably smaller proportion of overweight and obese individuals, and a comparably larger proportion of underweight and normal weight individuals. However, 90.9% of the participants in the present study fall in the 18 to 25 year old demographic. As the 25 to 39 year old demographic is underrepresented in the present study compared to the general population, and also because age has been correlated with an increase in BMI in adults under 65 years (Shields, Gerber, & Tremblay, 2008), the present sample likely is representative of the general population.

## **Measures**

### *Measures: Demographics*

*Demographics questionnaire.* This questionnaire was used to gather demographic information from participants, including their age, ethnicity, and program of study (see Appendix B).

### *Measures: Dependent variables*

*Body-Image Ideals Questionnaire (BIIQ).* The Body-Image Ideals Questionnaire (see Appendix C; Cash & Szymanski, 1995) is a 22-item inventory that

measured the discrepancy between individuals' appearance ideal and their perceived actual appearance, as well as the importance of that discrepancy. Participants are asked to first rate the discrepancy between specific parts of their ideal body with their perceived current appearance, and then rated the importance of that ideal to them. A sample item states, "My ideal height is...", answered on a 4-point scale from 0 (*exactly as I am*) to 3 (*very unlike me*), followed by, "How important to you is your ideal height?", answered on a scale from 0 (*not important*) to 3 (*very important*). The standard composite score for the Body-Image Ideals Questionnaire is generated by multiplying the ideal discrepancy rating with the importance rating, and calculating the average of this product to generate an importance weighted discrepancy score. A higher composite score indicates a higher overall discrepancy between one's ideal and perceived body. The Body-Image Ideals Questionnaire has adequate internal consistency, with a Cronbach alpha of .76 in a sample of female undergraduates (Cash & Szymanski, 1995). Further, the Body-Image Ideals Questionnaire displayed good convergent validity with other validated measures of appearance satisfaction, including the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire ( $r = -.61$ ), and the Body Areas Satisfaction Scale ( $r = -.72$ ; Cash & Szymanski, 1995).

*Eating Disorder Inventory-2 (EDI-2)*. The Eating Disorder Inventory-2 (see Appendix D; Garner, 1991) is a 91-item self-report measure designed to assess attitudes, feelings, and behaviours that are commonly associated with disordered eating. Participants are asked to respond to each item based on how frequently they engaged in that specific activity, emotion, or cognitive process on a 6-point scale ranging from 6 (*always*) to 1 (*never*). A sample item is, "I am terrified of gaining weight." The Eating

Eating Disorder Inventory-2 is comprised of 11 subscales: drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, personal distrust, interoceptive awareness, asceticism, impulse regulation, and social insecurity. Individuals who score higher on the Eating Disorder Inventory-2 tend to have attitudes, behaviours, and affect that are increasingly similar to that held by individuals with eating disorders. The Eating Disorder Inventory-2 is scored by summing the values for all items to create a total score. A higher composite score indicates greater endorsement of ED attitudes. The Eating Disorder Inventory-2 has adequate internal consistency, with Cronbach alphas ranging from .68 to .87 in a sample of non-clinical female undergraduates (Garner, 1991). Test-retest reliability ranging from .81 to .89 was found for a one week interval in an ED-diagnosed sample (Thiel & Paul, 2006). The Eating Disorder Inventory-2 had convergent validity with another measure of disordered eating attitudes and behaviours, the Bulimia Test-Revised, and an internally consistent, modified Structured Interview for the DSM-IV-Research form (Spillane, Boerner, Anderson, & Smith, 2004).

*Eating Disorder Examination Questionnaire (EDEQ).* The Eating Disorder Examination Questionnaire (see Appendix E) is a 36-item self-report measure designed to assess the frequency and severity of disordered eating symptomatology (Fairburn & Beglin, 1994). Participants are instructed to respond to each item based on how frequently they engaged in that specific behaviour or cognitive process over the past four week period. Some questions required a rating on a 7-point scale ranging from 0 (*no days*) to 6 (*every day*); for example, “On how many of the past 28 days have you been afraid of losing control over eating?” There are also several questions inquiring about whether or not the respondent engaged in a specific disordered eating behaviour (e.g.,

vomiting to control weight / shape). These are answered 0 (*no*) or 1 (*yes*), followed by a second open-ended item inquiring the specific frequency of the behaviour over the past four-week period.

A behavioural subscale was formulated from the six specific eating disorder behaviours assessed by the Eating Disorder Examination Questionnaire: objective bingeing, subjective bingeing, vomiting, laxative abuse, diuretic abuse, and overexercising. Each behaviour was scored according to the number of times a participant reported engaging in that behaviour over the past 28 days, according to the definition of that behaviour by the *DSM-IV-TR*. First, each item was checked for positive correlation with other items in the behavioural subscale and the existing restraint subscale. The items of ‘diuretic abuse’ and ‘overexercising’ were not significantly positively correlated to the other behavioural items, and were removed from the subscale. As with the other subscales in this measure, the behavioural subscale score was calculated as an average of the item scores. The Cronbach alpha for the behavioural subscale was .68, with a strong positive item-total correlation between the four behavioural items and the behavioural subscale ( $r \geq .216, p < .01$ ). A composite symptom score was generated through averaging the established restraint subscale with the subscale formulated from the specific disordered eating behaviour items. This reflects the original method of calculating the global score for this measure, which involves taking the average of all subscale scores. However, the behaviour subscale had a non-normal distribution in the sample, and very few individuals endorsed its items (e.g., <1% of the sample endorsed diuretic abuse). Thus, the behavioural items were not included in the final analyses. Instead, the restraint subscale was used to represent the ED symptoms variable, as the

items in the subscale were considered to be most representative of the symptom component of eating disorders, separate from the attitude aspect assessed by the Eating Disorder Inventory-2. A higher restraint subscale score indicates greater frequency and severity of ED behaviour. There is good internal consistency for this measure, with Cronbach alphas of .78 and higher, as well as good test-retest reliability in a two week period with a non-clinical undergraduate female sample, with correlations between .81 and .94 for each subscale (Luce & Crowther, 1999).

*Measures: Independent variables*

*Coping Inventory for Stressful Situations (CISS).* The Coping Inventory for Stressful Situations (see Appendix F) is a 48-item self-report measure designed to assess dominant coping style (Endler & Parker, 1990b). Participants are asked to respond to each item based on how frequently they engage in that specific task when faced with a stressful situation, rating them on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*). A sample item is, “Focus on the problem and see how I can solve it.” Items are divided into four separate subscales: task-oriented, emotion-oriented, avoidance through distraction, and social diversion as dominant coping styles, all of which were compared in the statistical analyses. The Coping Inventory for Stressful Situations subscale scores are calculated by summing the items of each subscale. A higher subscale score indicates greater endorsement of a specific coping style. The Coping Inventory for Stressful Situations has good internal consistency, with subscale Cronbach alphas ranging from .76 to .89 (Endler & Parker, 1994). The Coping Inventory for Stressful Situations also has good to adequate convergent validity with other measures of dominant coping style, specifically the Defensive Styles Questionnaire ( $r = .45$  to  $r = .61$ ), and the Coping



Strategy Indicator ( $r = .41$  to  $r = .48$ ) in a female undergraduate sample (Endler & Parker, 1994).

*Problem Questionnaire (PQ).* The Problem Questionnaire (see Appendix G) is a 61-item self-report measure designed to assess the level of stress stemming from seven life domains (school, future, parents, peers, leisure, romantic relationships, self; Seiffge-Krenke, 1995). Items number 8 (“I might not get into the training program or college/university of my choice”) and number 42 (“I don’t have a boyfriend/girlfriend”) were removed due to incompatibility with the sample under study, who were all currently enrolled at a university and reported that they were currently involved in a romantic relationship at the time of the study. As such, this questionnaire was utilized in the present study as a 59-item measure. A sample item is, “I am afraid of hurting my boyfriend/girlfriend because I am unsure of his/her feelings.” Participants are asked to respond to each item on a five-point scale ranging from 1 (*not stressful at all*) to 5 (*highly stressful*). The subscale scores for each life domain are created through calculating an average score from the items that compose each subscale. Higher scores indicate more stress in that life domain. Only the romantic relationship life domain subscale was used in the present statistical analyses. The Problem Questionnaire has adequate internal consistency, with Cronbach alphas ranging from .74 to .85 for each domain subscale (Seiffge-Krenke, 2006, 2010), as well as good convergent validity (Terzini-Hollar, 2007). Test-retest stability for administrations every four months over a year-long period were sufficient, ranging from  $r = .54$  to  $r = .83$  for each of the domain subscales (Seiffge-Krenke, 1995).

*Appearance Schemas Inventory – Revised Short Form (ASI-R).* The Appearance Schemas Inventory-Revised short form (see Appendix H) is a 20-item self-report measure designed to assess the value placed on appearance, and includes two subscales. The self-evaluative salience sub-scale measures the extent to which one's self-worth is based on appearance. The motivational salience sub-scale measures the investment of time, energy, and effort puts toward maintaining a specific standard of appearance (Cash et al., 2004a). A sample item is, "My appearance is responsible for much of what's happened to me in my life." Participants are asked to respond to each item along a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The subscale scores for the Appearance Schemas Inventory-Revised are calculated through averaging the scores for items that comprise the subscale. Higher scores indicate greater value placed on appearance, and a greater investment in one's appearance. The Appearance Schemas Inventory-Revised is psychometrically sound and internally consistent, with a Cronbach alpha of .88 in a female sample for the composite measure and Cronbach alphas of .82 and .90 for the Self-Evaluative Salience and Motivational Salience subscales, respectively (Cash et al., 2004a). The Appearance Schemas Inventory-Revised also has adequate convergent validity, correlating with the Perfectionistic Self-Presentation Scale ( $r = .57$ ), the Body-Image Ideals Questionnaire ( $r = .53$ ), and the Situational Inventory of Body-Image Dysphoria ( $r = .67$ ; Cash et al., 2004a).

*Measures: Covariates*

*Rosenberg Self-Esteem Scale (RSES).* The Rosenberg Self-Esteem Scale (see Appendix I; Rosenberg, 1965; 1979) is a 10-item self-report measure of trait self-

esteem. A sample item is, “I feel that I have a number of good qualities.” Participants respond to each item on a 4-point scale ranging from 4 (*strongly agree*) to 1 (*strongly disagree*). The Rosenberg Self-Esteem Scale is scored by summing the items of the measure to create a total score. Higher scores indicate higher reported trait self-esteem. The Rosenberg Self-Esteem Scale has high internal consistency, with a Cronbach alpha of .92 (Rosenberg, 1979). The Rosenberg Self-Esteem Scale also has good test-retest reliability, with an across time correlation of .69 over a four year period (Robins, Hendin, & Trzesniewski, 2001). This measure also has good convergent validity, correlating with the Beck Depression Inventory (Griffiths et al., 1999) and the Ineffectiveness subscale of the Eating Disorder Inventory-2, at .73 and .66, respectively (Griffiths et al., 1999), and correlating moderately ( $r = .58$ ) with the Coopersmith Self-Esteem Inventory (Demo, 1985). Self-esteem was tested as a covariate in the present study, as low trait self-esteem has been correlated with body image disturbance (Furnham, Badmin, & Sneade, 2002), self-evaluative salience (Cash et al., 2004a), stress (Fryer, Waller, & Kroese, 1997), avoidant coping style (Martyn-Nemeth, Penckofer, Gulanick, Velsor-Friedrich, & Bryant, 2009), and ED (Fairburn, Cooper, Doll, & Welch, 1999).

*Beck Depression Inventory-2 (BDI-2)*. The Beck Depression Inventory-2 (see Appendix J; Beck, Steer, & Brown, 1996) is a 21-item self-report inventory measuring the severity of depressive symptomatology over the past two weeks. A sample item is, “Sadness,” with participants selecting a specific statement based on how they felt during the past two weeks on a 4-point scale ranging from 0 (*I do not feel sad.*) to 3 (*I am so sad or unhappy that I can't stand it.*). A similar range of statements is provided for each item of the measure. The Beck Depression Inventory-2 is scored by summing the

items of the measure to calculate a total score. Higher scores indicate greater endorsement of depressive symptomatology. This measure has been found to be psychometrically sound, with a high internal consistency ( $\alpha = .92$ ; Beck et al., 1996). It also has adequate convergent validity with other measures of depression, anxiety, self-esteem, and stress, including the Depression Anxiety Stress Scales ( $r = .77$ ), the Rosenberg Self-esteem scale ( $r = -.64$ ), and the Mood and Anxiety Symptom Questionnaire ( $r = .71$ ; Osman et al., 1997). Depression was measured as a covariate in the present study, as it correlates with avoidant coping style (Schwarze et al., 2004), negative body image (Noles, Cash, & Winstead, 1985), stress (Cattanach, Malley, & Rodin, 1988), body dissatisfaction (Blashill & Vander Wal, 2010), and ED symptomatology (Stice, Akutagawa, Gaggan, & Agras, 2000).

*Trait subscale of the State-Trait Anxiety Inventory (STAI-Y).* The Trait subscale of the State-Trait Inventory Form Y (see Appendix K; Spielberger, 1983) is a 20-item self-report scale measuring global trait anxiety levels. A sample item is, “I feel nervous and restless.” Participants are asked to respond on a 4-point scale, ranging from 1 (*not at all or almost never*) to 4 (*very much so or almost always*). The State-Trait Inventory Form Y is scored by calculating the mean of all items in the measure to create a composite score. Higher scores indicate greater endorsement of trait anxiety. This measure has high internal consistency, with a Cronbach alpha ranging from .90 to .92 for the Trait subscale (Ramaniah, Franzen, & Schill, 1983), and test-retest reliability of .97 after a three week period (Metzger, 1976). Anxiety was measured as a covariate in the present study, as it has been correlated with avoidant coping style (Moskowitz et al.,

2009), ED (Hinrichsen, Wright, Waller, & Meyer, 2003), body dissatisfaction, and dysfunctional body image investment (Cash et al., 2004b).

*Perceived Relationship Quality Components (PRQC).* The Perceived Relationship Quality Components questionnaire (see Appendix L; Fletcher, Simpson, & Thomas, 2000) is an 18-item self-report scale measuring perceived satisfaction with the quality of a romantic relationship. A sample item is, “How much do you trust your partner?” Participants respond on a seven-point scale, ranging from 1 (*not at all*) to 7 (*extremely*). The Perceived Relationship Quality Components is scored by summing all the items of the measure to create a composite score. Higher scores indicate greater perceived satisfaction with romantic relationship quality. The Perceived Relationship Quality Components has high internal consistency, with a Cronbach alpha ranging from .85 to .88 for the measure (Fletcher et al., 2000). Relationship satisfaction was measured as a covariate in the present study, as it has been positively correlated to greater body satisfaction (Friedman et al., 1999), and negatively correlated to disordered eating (Markey et al., 2001) as well as depressive symptomatology and romantic stress (Tolpin, Cohen, Gunthert, Farrehi, 2006).

### **Procedure**

Participants signed up for this study through the University of Windsor’s Participant Pool system (see Appendix A for Participant Pool Advertisement). Participants who chose to sign up were provided with an internet web-link to a page describing the study and requesting consent for participation (see Appendix M for consent form). They were asked to set aside about one hour to complete the survey and were encouraged to complete it in a quiet area. Consenting participants were directed to

an electronic form of the questionnaires for this investigation. This electronic form was designed on the FluidSurveys platform and hosted on a secured University of Windsor server. Instructions for some paper-based questionnaires were modified for the web administration (e.g., the word “choose” used instead of “circle”). It has been shown that web-based studies provide results consistent with traditional paper-and-pencil studies, and participants have reported being equally motivated and serious when engaging in web-based research, compared to paper-and-pencil studies (Gosling, Vazire, Srivastava, & John, 2004).

Due to technological limitations of the FluidSurveys structure, the instruments could not be randomized, and were presented in an order intended to conceal the true purpose of the study. The more general measures were presented first, with more explicit measures inquiring about eating habits and body image presented later. The measures were presented as follows: Problem Questionnaire, Appearance Schemas Inventory-Revised, Rosenberg Self-Esteem Scale, Eating Disorders Inventory-2, State-Trait Anxiety Inventory Form Y – Trait subscale, Perceived Relationship Quality Components, Eating Disorder Examination Questionnaire, Beck Depression Inventory-2, Coping Inventory for Stressful Situations, and the Body-Image Ideals Questionnaire. Following completion of the questionnaires, participants were directed to a debriefing webpage explaining the purposes of the study and thanking them for their time and contribution to the investigation (Appendix N). Participants were identified only by an assigned ID number, with demographic and identifying data stored separately from the rest of the data collected through FluidSurveys. Identifying data were retained for bonus point assignment purposes, and subsequently deleted.

## CHAPTER III

### RESULTS

#### **Approach to Data Analysis**

All analyses were performed using SPSS, Version 19.0. First, all variables were analyzed for internal reliability through calculation of Cronbach alpha values, and descriptive analyses were conducted to explore variable distributions. Second, a series of simple correlations were conducted to ensure that the covariates were sufficiently correlated to the dependent variables (DVs). Variables were retained as covariates if they were significantly correlated to the DVs. Third, the assumptions of multiple regression analyses were tested. Subsequently, the two hypotheses were tested with multiple hierarchical linear regressions. Next, the bootstrapping procedure was conducted due to the failure to meet the assumption of normality for all outcome variables. The use of bootstrapping strengthened the trustworthiness of any inference of significance, given that the procedure does not require the assumption of normality. Finally, simple slopes analyses were conducted to further explore the significant interaction term.

#### **Preliminary Analyses**

Prior to conducting statistical analyses, the data were examined for 'Prefer Not to Answer' (PNTA) responses. From the original 300 participants, four participants were removed from the sample for responding 'Prefer Not to Answer' to the entire Rosenberg Self-Esteem Scale in one case, the Eating Disorder Examination Questionnaire in another case, the Beck Depression Inventory-2 in a separate case, and the Coping Inventory for Stressful Situations in the final case. This left a sample of 296 participants.

When participants selected the PNTA response for any item on a given measure, the value of that item was replaced by the mean of all other responses provided for that specific subscale. All reverse-scored items were re-coded prior to calculating the means and replacing the PNTA response. Subsequently, the mean score replacing a PNTA response was reversed, if that item was reverse-scored. Sixty five cases had at least one PNTA response, all of which were replaced according to this procedure for a total of less than 2% of all responses. One to eleven values were replaced for any given participant who responded PNTA at least once and was included in the final sample. Descriptive statistics were examined prior to and subsequent to the PNTA response replacement to ensure that results were not influenced by the modification. No significant differences were found in the variable distributions or the means after the PNTA responses were replaced.

Subsequently, internal consistency Cronbach alpha coefficients were calculated for all the questionnaires and subscales. Table 1 contains the reliability coefficients, as well as the overall means, ranges, and standard deviations for all the measures. The reliability analyses produced coefficients ranging from 0.78 to 0.96, indicating good internal consistency for all measures.

### **Refining the Eating Disorder Symptoms Variable**

The Eating Disorder Examination Questionnaire contains items that assess attitudes and behaviours associated with eating disorders. In this study, the Eating Disorder Inventory-2 has already been incorporated as a measure of ED attitudes. Thus, the attitude items must be removed from the Eating Disorder Examination Questionnaire in order to provide the most accurate representation of the ED symptoms variable. There



will be minimized overlap with the ED attitudes variable, as the attitude items were removed from the Eating Disorder Examination Questionnaire. This will allow for distinct analyses of ED symptoms and ED attitudes as separate variables, and a more useful comparison between the two types of constructs when the overlap between the two measures are minimized. Three of the four original subscales (Eating Concern, Weight Concern, and Shape Concern) contain items that encompass disordered eating attitudes. Only one original subscale (Restraint) is comprised entirely of items assessing behavioural aspects of disordered eating. As such, only the Restraint subscale was retained for the present analyses.

The Eating Disorder Examination Questionnaire also includes six items assessing specific disordered eating behaviour such as laxative use for the purpose of weight / shape control. These items are not included in the four original subscales. A behavioural subscale score was calculated from these items in a manner similar to the original subscales of this measure, which is the mean of all the item scores from the subscale. However, this behavioural subscale could not be included as a component of the ED symptoms variable in the present analyses, due to the overall low endorsement of the ED behavioural items in this non-clinical sample. This low endorsement led to a very strong positive skew in the variable distribution, which was reflected in a skewness value of 9.55 and a kurtosis value of 115.64. This strong skew could not be normalized through data transformation. Three data transformations commonly applied to normalize positive skew were attempted, with the addition of a constant to each value in the dataset to ensure that all values would remain positive after transformation. The application of a logarithmic transformation led to no visible normalization of the histogram with a

skewness value of 9.11 and a kurtosis value of 106.34. The application of a square root transformation led to no visible normalization of the histogram with a skewness value of 9.30 and a kurtosis value of 110.46. Similarly, the application of a reciprocal transformation led to no visible normalization of the histogram with a skewness value of 8.60 and a kurtosis value of 95.86. Due to this persistent and strong positive skew, the behavioural subscale was not included in the overall ED symptoms variable in this study. As three of the original subscales could not be included due to attitude-related items that overlapped with the ED attitudes variable, the Restraint subscale was retained as the most reliable and accurate measure of ED symptoms in this study.

### **Assumptions of Multiple Regression Analyses**

Descriptive analyses were performed on each variable to test for the presence of outliers. Two multivariate outliers were detected through examination of Mahalanobis' distance at a  $\chi^2$  distribution cut-off of 31.264,  $p < .001$  (Tabachnick & Fidell, 2007). Examination of the variables in the present study indicated that these participants were outliers on both the Restraint subscale of the Eating Disorder Examination Questionnaire and the Body-Image Ideals Questionnaire. Further examination of the outliers led to the removal of the two participants, as they had responded "1" to all of the items on the Body-Image Ideals Questionnaire or the Coping Inventory for Stressful Situations, which contributed to their identification as outliers. The removal of these multivariate outliers was necessary, as the presence of such outliers can distort the results in the statistical analyses (Tabachnick & Fidell, 2007). The removal of the two cases left a final sample size of 294 participants.

In order to detect univariate outliers, the residuals for each case were calculated and standardized, to a mean of 0 and a standardized deviation of 1. A further twenty cases were identified as univariate outliers through examination of their standardized z-scores at a cutoff of 3.29,  $p < .001$  on a two-tailed test. Outlying values were reduced through Winsorizing, whereby outlying values were reduced to the next closest non-outlying value.

Following the reduction of univariate outliers, the assumption of the absence of influential observations was checked by calculating Cook's distance and standardized DFFITS for all cases in the sample. No cases exceeded the standard cutoff of 1 for Cook's distance, or the standard cutoff of 2 for standardized DFFITS (Field, 2009).

The assumption of no perfect multicollinearity or singularity was assessed by examining the correlations between variables, as well as by examining the variance inflation factors (VIF) and tolerance values. This assumption was met, as none of the variables had a correlation to each other above .80 (Table 2), and none of the VIFs or tolerance values exceeded the respective cutoffs of greater than 10 or less than .1 (Field, 2005). The assumption of independence of residuals was also met in the study, based on the Durbin-Watson statistic (Field, 2005).

The assumptions of normally distributed error, linearity, and homoscedasticity also were assessed. The regressions on the outcome variables of Body-Image Ideals Questionnaire and Eating Disorder Inventory-2 created scatterplots charting standardized residuals against predicted residuals that were approximately rectangular with a central concentration of scores. However, the regression on the Restraint subscale of the Eating Disorder Examination Questionnaire outcome variable was trumpet-shaped with

heteroscedastic deviations in variance. The histograms of the standardized residuals were approximate to the normal curve for all three regressions, as were the Q-Q plots for each of the regressions. Thus, it was concluded that the assumptions of normally distributed errors and linearity were met for all three dependent variables. The assumption of homoscedasticity was met for the outcome variables of Body-Image Ideals Questionnaire and Eating Disorder Inventory-2, but the distribution of the Restraint subscale of the Eating Disorder Examination Questionnaire outcome variable appeared heteroscedastic. Heteroscedasticity in an analysis may be an indication of an interaction between predictors (Field, 2009). Although the presence of heteroscedastic distributions may lead to inaccurate standard errors and subsequently inaccurate significance tests, that can be compensated for by a large sample size, as in this study (Cohen, Cohen, West, & Aiken, 2003).

According to Cohen (1992), a total of 228 participants were required for a power of .80 and a medium effect size (.50) for multiple regression analyses. The present sample ( $N = 294$ ) provided adequate sample size to support the validity of the regression analyses.

Table 1

*Descriptive Data for all Measures*

Variable	Range	Mean	Standard Deviation	Cronbach Alpha
Age	18.00-50.00	21.60	4.43	---
BMI	15.62-37.12	22.95	4.12	---
BDI-2	0.00-46.00	11.58	9.77	0.95
RSES	6.00-30.00	20.79	5.06	0.88
STAI-Y – Trait Subscale	1.00-3.65	2.11	0.56	0.93
PRQC	52.00-126.00	107.34	16.64	0.95
CISS – Avoidant Coping Subscale	8.00-38.00	22.77	6.03	0.78
CISS – Task Coping Subscale	29.00-80.00	56.65	10.43	0.92
CISS – Emotion Coping Subscale	16.00-76.00	45.69	11.66	0.90
CISS – Social Coping Subscale	5.00-25.00	17.81	4.05	0.79
ASI-R – Self-evaluative Salience Subscale	1.67-4.75	3.39	0.69	0.89
PQ – Romantic Relationship Subscale	1.00-4.71	2.02	0.86	0.86
BIIQ	-3.00-5.55	1.65	1.62	0.81
EDI-2	38.00-348.00	164.71	56.52	0.96
EDEQ – Restraint Subscale	0.00-6.00	1.47	1.53	0.94

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y; PRQC = Perceived Relationship Quality Components; CISS = Coping Inventory for Stressful Situations; ASI-R = Appearance Schemas Inventory-Revised; PQ = Problem Questionnaire; BIIQ = Body-Image Ideals Questionnaire; EDI-2 = Eating Disorders Inventory-2; EDEQ = Eating Disorders Examination Questionnaire. (1994).

*The Assumption of Normality*

Field (2005) suggests the evaluation of histograms, Q-Q plots, the Shapiro-Wilkes statistic, the Kolmogorov-Smirnov test, and skewness and kurtosis values when considering the assumption of normality and the extent of deviation from normality. In the present study, the Kolmogorov-Smirnov test was chosen instead of the Shapiro-Wilkes test, as the latter is considered to have greater sensitivity in detecting deviations from normality (Field, 2005). However, the Kolmogorov-Smirnov test should still be interpreted with caution in large sample sizes, as it is sensitive to small deviations from normality that may not be large enough to bias the statistical analyses (Field, 2005).

For the three outcome variables of ED attitudes, ED symptoms, and body dissatisfaction, skewness and kurtosis values were within acceptable ranges ( $\pm 2$  for skewness and  $\pm 3$  for kurtosis) for supporting the assumption of normality. Skewness values were between .35 and 1.00, while kurtosis values were between -.66 and .44 for the three DVs. The Q-Q plots of the DVs also fit the appearance of a normal distribution. The histograms of the outcome variable distributions appeared to be normal for the Eating Disorder Inventory-2 measure and the Body-Image Ideals Questionnaire measure, but there was a moderate positive skew to the score distribution of the Restraint subscale of the Eating Disorder Examination Questionnaire. The Kolmogorov-Smirnov test of normality also was significant for the outcome variables of the Eating Disorder Examination Questionnaire – Restraint Subscale (.17,  $p < .001$ ) and Body-Image Ideals Questionnaire (.066,  $p = .003$ ), though not for the Eating Disorder Inventory-2 (.048,  $p > .05$ ). As there were no other indicators of non-normality in the Body-Image Ideals

Questionnaire measure, the deviations from normality indicated by the Kolmogorov-Smirnov test were not considered to be large enough to bias the statistical analyses.

Although multiple regression only assumes the normality of outcome variables, it is important to ensure that all variables involved have a generally normal distribution, as the solution may otherwise be affected (Tabachnick & Fidell, 2007). Skewness and kurtosis values for the predictor variables were all within acceptable ranges for the assumption of normality (Table 3). Visual inspection of the Q-Q plots and histograms showed some irregularity for the BMI, Beck Depression Inventory-2 (BDI-2), and Perceived Relationship Quality Components (PRQC) covariates. The histograms of the other predictors of avoidant coping, self-evaluative salience, romantic stress, and the other covariates of anxiety (State-Trait Anxiety Inventory Form Y- Trait Subscale) and self-esteem (Rosenberg Self-Esteem Scale) appeared normal. Visual inspection of the histograms for the predictor variables showed a negative skew to the Perceived Relationship Quality Components distribution. Further, the Romantic Stress subscale predictor variable had a strong positive skew, as did the Beck Depression Inventory-2 measure, and to a lesser extent, BMI. The Perceived Relationship Quality Components covariate was the only negatively skewed distribution.

#### *Data Transformations*

A common correction for non-normal distributions is transformation of dataset values (Field, 2009). Transformations were chosen considering the moderate positive skew of the Eating Disorder Examination Questionnaire – Restraint Subscale and the covariates of BMI and Beck Depression Inventory-2. As the Perceived Relationship

Quality Components was not a significant covariate to any of the DVs, its negatively skewed distribution was not considered in the application of data transformations.

The skewed distributions of Eating Disorder Examination Questionnaire – Restraint Subscale, BMI, and Beck Depression Inventory-2 first received a square root transformation, whereby each value in the distributions was replaced by the square root of the initial value. The transformed distributions were then tested for normality through generating a histogram of the distributions, and calculating skewness and kurtosis values. The moderate positive skew remained evident in the histograms of the distributions and skewness and kurtosis values were not notably changed (Table 3).

Subsequently, a logarithmic transformation was applied to these variables. As there were negative scores in the skewed variables, a positive constant was applied to every case of these variables equal to that of the largest negative value in order to allow for logarithmic transformations. Each value in the distributions was then replaced by the logarithm of the initial value. The transformed distributions were tested for normality through generating a histogram of the distributions, and calculating skewness and kurtosis values. However, the histograms of the initially skewed distributions did not appear or approach normality subsequent to this transformation. Skewness and kurtosis scores were not notably changed after the logarithmic transformation was applied (Table 3).

Finally, a reciprocal transformation was applied to these skewed variables with the inclusion of the constant. As there were negative scores in the skewed variables, a positive constant was applied to every case of these variables equal to that of the largest negative value in order to allow for reciprocal transformations. Each value in the



distributions was replaced by the reciprocal of the initial value. The transformed distributions were tested for normality through generating a histogram of the distributions, and calculating skewness and kurtosis values. There was no improvement on the histograms of the initially skewed distributions, with a moderate positive skew still apparent. Skewness and kurtosis scores were not notably changed after the reciprocal transformation was applied (Table 3).

None of the applied transformations improved the normality of the skewed variables. The variable should be close to normally distributed following the transformation (Tabachnick & Fidell, 2007), which was not the case in the present study. As such, no transformations were used in the present analyses. This decision is supported by Tabachnick and Fidell (2007), who stated that when the variables are skewed to a similar extent, as in the present study, there is relatively little benefit to transforming the dataset. In the present analyses, the application of transformations intended to reduce positive skew did not lead to any visible improvement in normality in the Q-Q plots and the histograms, or any notable improvements in the skewness and kurtosis values (Table 3).

Table 2

*Summary of Correlations between Covariates, Outcome, and Predictor Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	-													
2. BMI	.18**	-												
3. BDI-2	-.11	.04	-											
4. RSES	.13*	.01	-.57**	-										
5. STAI-Y – Trait Subscale	-.13*	.00	.72**	-.76**	-									
6. PRQC	-.13*	.01	-.36**	.31**	-.34**	-								
7. CISS – Avoidant Coping Subscale	-.14*	.02	.11	.01	.08	.00	-							
8. CISS – Task Coping Subscale	.09	.05	-.21**	.41**	-.35**	.14*	.21**	-						
9. CISS – Emotion Coping Subscale	-.10	-.05	.61**	-.48**	.66**	-.19*	.27**	-.09	-					
10. CISS – Social Coping Subscale	-.06	-.01	-.21**	.29**	-.30**	.22**	.31**	.50**	-.06	-				
11. ASI-R – Self- evaluative Salience Subscale	-.16**	.02	.42**	-.53**	.54**	-.13*	.16**	-.21**	.46**	-.12*	-			
12. PQ – Romantic Relationship Subscale	-.14*	.00	.40**	-.37**	.40**	-.34**	.11	-.19**	.27**	-.23**	.39**	-		
13. BIIQ	-.04	.18**	.50**	-.50**	.52**	-.19**	.09	-.22**	.32**	-.18**	.47**	.31**	-	
14. EDI-2	-.15*	.12*	.67**	-.68**	.76**	-.31**	.11	-.33**	.54**	-.30**	.57**	.46**	.55**	-
15. EDEQ – Restraint Subscale	-.06	.25**	.32**	-.26**	.28**	-.14*	.10	-.07	.16**	-.08	.37**	.12*	.40**	.48**

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y; PRQC = Perceived Relationship Quality Components; CISS = Coping Inventory for Stressful Situations; ASI-R = Appearance Schemas Inventory-Revised; PQ = Problem Questionnaire; BIIQ = Body-Image Ideals Questionnaire; EDI-2 = Eating Disorders Inventory-2; EDEQ = Eating Disorders Examination Questionnaire.

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

### *The Bootstrapping Procedure*

In lieu of transforming the data, bootstrapping was used as a means of strengthening the conclusions of the regression analyses. The bootstrapping technique is an ideal alternative to data transformation in larger samples, as it does not assume normality (Nevitt & Hancock, 2001). Multiple samples are taken from the original skewed distribution to create a new sampling distribution which takes into account skewness (Azen, Budescu, & Reiser, 2001). Cases are randomly drawn from the original sample in order to recreate multiple equally sized samples, with each case possibly selected an infinite number of times (Azen et al., 2001). Each random bootstrapping sample will resemble the original sample, but bear a more normalized distribution due to the random method of sampling. This form of sampling allows this procedure to correct for skewed samples, as in this study, since the distributions in the bootstrapped samples are comparatively more normal with reduced skew. This allows the results of a bootstrapping procedure to provide support for a regression of non-normal distributions which may otherwise be untrustworthy. As all samples are taken from the initial study sample, the results remain applicable to the original study. The regression is run for each of these random samples, and confidence intervals are calculated for each predictor based on their impact across each of the samples. Predictors whose confidence intervals do not include zero are considered to be significant across all the bootstrapped samples for that specific regression. The trustworthiness of the regression results is strengthened if the results of the bootstrapping procedure match those of the regression analyses. Lorenzo-Seva, Ferrando, and Chico (2010) provided the syntax script used to conduct the

bootstrapping, which computed multiple regression analyses while calculating bootstrap confidence intervals for the model coefficients.

### *Main Analyses*

The correlations between all covariate, predictor, and outcome variables are listed in Table 2. All planned covariates (Body Mass Index, Perceived Relationship Quality Components, Rosenberg Self-Esteem Scale, Beck Depression Inventory-2, and State-Trait Anxiety Inventory Form Y – Trait subscale) that were significantly correlated to each outcome variable were included in the corresponding regression analyses (Field, 2005). The Perceived Relationship Quality Components was not correlated to the outcome variable of Eating Disorder Examination Questionnaire (Table 2), and was not included as a covariate in those analyses. For each regression, all significant covariates were entered in the first block (Tabachnick & Fidell, 2007), whereas predictor variables and interaction terms, where applicable, were entered in the second block. All predictor variables and covariates were centered prior to analyses and computation of the interaction terms, in order to minimize multicollinearity (Tabachnick & Fidell, 2007).

The bootstrapping procedure was conducted subsequent to each regression analysis due to the non-normality of some variable distributions, and as a means of supporting the regression results. Each regression was re-run through the bootstrapping syntax from Lorenzo-Seva et al. (2010) with 1000 bootstrap trials. Statistical significance of coefficients was determined through inspection of the signs for the upper and lower limits of the confidence intervals. Further details of the bootstrapping analyses are provided with each specific regression analysis.

Table 3

*Skewness and Kurtosis Values Pre- and Post-transformations*

Variable	Transformation							
	Pre-transformation		Square root		Logarithmic		Reciprocal	
	Skew	Kurt	Skew	Kurt	Skew	Kurt	Skew	Kurt
EDEQ – Restraint Subscale	1.00	.11	.98	.05	.96	.00	-.92	-.13
BDI-2	1.10	1.12	.88	.49	.72	.08	-.34	-.62
BMI	1.19	1.53	1.09	1.21	1.00	.98	-.78	.47

*Note.*  $N = 294$ . EDEQ = Eating Disorder Examination Questionnaire; BDI-2 = Beck Depression Inventory-2; BMI = Body Mass Index.

### **Hypothesis One: Coping Style**

Avoidant coping was hypothesized to have a stronger relationship to ED symptoms and attitudes, as well as to body dissatisfaction than would task-oriented, emotion-oriented, or social coping. The first set of regressions examined the four measured coping styles as predictors of the outcome variables of body dissatisfaction, ED attitudes, and ED symptoms. In the first block of the regression, the covariates of depression, anxiety, perceived relationship quality, BMI, and self-esteem were entered into the regression. The four coping style predictor variables, comprised of the four subscales of the Coping Inventory for Stressful Situations (Task Coping, Emotion Coping, Social Coping, and Avoidant Coping) were entered as predictor variables in the second block of the regression.

#### *Eating Disorder Attitudes*

The first of the three regressions mentioned above examined the four coping styles as predictors of ED attitudes, which was measured with the Eating Disorder Inventory-2 (Table 4). Potential covariates were tested first. Perceived relationship satisfaction was not a significant contributor to the model and was removed. The regression was subsequently re-run. When the four remaining covariates (BMI, depression, self-esteem, and anxiety) were included into the first block of the model, the model was significant in predicting ED attitudes ( $F= 131.94, p < .001$ ) and accounted for 64.6% of the variance in ED attitudes. When the coping style predictors were included in the second step, the model was still able to significantly predict ED attitudes ( $F= 2.60, p=.036$ ), and accounted for an additional 1.2% of the variance. The complete model accounted for 65.9% of the variance in ED attitudes.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 4). All four of the included covariates contributed significantly to the model ( $ps \leq .001$ ). As predicted, avoidant coping style was the strongest predictor of ED attitudes ( $t = 2.26, p = .025$ ). Participants who endorsed a greater use of avoidant coping style reported higher endorsement of ED attitudes. The semi-partial correlation between avoidant coping style and ED attitudes was .006, which indicates that removal of the avoidant coping style predictor will decrease  $R^2$  by the same amount, or 0.6% of the variance accounted for in ED attitudes. The overall change in  $R^2$  from including the IVs was 1.2%, so avoidant coping accounted for half of that change in variance. Social coping was the only other coping style to significantly contribute to the model ( $t(7) = -1.98, p = .048$ ).

The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients. The results of the bootstrapping supported the results of the regression, with the complete model accounting for 68.3% of the variance in ED attitudes,  $R^2 = .68, 95\% \text{ CI } [.59, .79]$ . The four significant covariates from the original regression contributed significantly to the model, and avoidance was the only significant coping style predictor (Table 5). Social coping was not a significant predictor in the bootstrapping model, which is considered to be more accurate than the original regression as it does not assume normality. As such, the results of the bootstrapping procedure take precedence over the original regression results. The results of the bootstrapping approximated the results of the original regression analyses, thus supporting the validity of the regression model.

Table 4

*Coping Style Predictors of Eating Disorder Attitudes*

		<i>SE b</i>	<i>B</i>	$\beta$	<i>t</i>	<i>Sig.</i>
Step	Variables Entered					
I.	Constant	1.97	164.71	-	83.43	.000
	BMI	.48	1.56	.11	3.25	.001
	STAI-Y (Trait)	6.45	43.57	.43	6.75	.000
	BDI-2	.29	1.32	.23	4.52	.000
	RSES	.61	-2.48	-.22	-4.09	.000
II.	Constant	1.95	164.71	-	84.35	.000
	BMI	.48	1.59	.11	3.31	.001
	STAI-Y (Trait)	7.00	38.47	.38	5.50	.000
	BDI-2	.30	1.24	.22	4.14	.000
	RSES	.62	-2.36	-.21	-3.18	.000
	Task Coping	.23	-.25	-.05	-1.08	.281
	Emotion Coping	.25	.14	.03	.57	.566
	Avoidant Coping	.36	.81	.09	2.26	.025
	Social Coping	.59	-1.17	-.08	-1.98	.048

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES =

Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y.



Table 5

*Bootstrapping Results for Coping Style Predictors of Eating Disorder Attitudes*

<i>Variable</i>	<i>Mean <math>\beta</math></i>	<i>95% CI</i>	
		<i>Lower Bound</i>	<i>Upper Bound</i>
BMI	.11	.05	.18
STAI-Y (Trait)	.42	.10	.73
BDI-2	.19	.05	.34
RSES	-.22	-.41	-.03
Task Coping	-.02	-.11	.08
Emotion Coping	-.02	-.18	.14
Social Coping	-.11	-.24	.00
Avoidant Coping	.12	.01	.23

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval; BMI = Body Mass Index;

BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale;

STAI-Y = State-Trait Anxiety Inventory Form Y.

### *Eating Disorder Symptoms*

The second regression examined the four coping styles as predictors of ED symptoms, which was measured with the Restraint subscale of the Eating Disorder Examination Questionnaire (Table 6). Anxiety and self-esteem were not significant covariates and were removed from the model. Subsequently, the regression was re-run. When the two covariates (BMI and depression) were entered in the first block of the model, the model was significant in predicting ED symptoms ( $F(1)= 27.31, p < .001$ ) and accounted for 15.8% of the variance in ED symptoms. Including the coping style predictors in the second step of the model did not contribute to its predictive power, as this step was not significant ( $F(5)= 0.67, p =.612$ ), though it accounted for an additional 0.8% of the variance. The complete model accounted for 16.6% of the variance in ED symptoms.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 6). The two included covariates contributed significantly to the model when both variable blocks were included ( $ps \leq .001$ ). Contrary to predictions, no coping style significantly contributed to the model ( $ps > .122$ ).

The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients. The results of the bootstrapping supported the results of the regression, with the complete model accounting for 17.6% of the variance in ED symptoms,  $R^2 = .18, 95\% \text{ CI } [.12, .29]$ , with the two significant covariates from the original regression contributing significantly to the model (Table 7). As was seen in the original regression, neither of the two coping styles were significant contributors to the model (Table 7). The results of the bootstrapping approximated the results of the original regression, thus supporting the validity of the regression model.

Table 6

*Coping Style Predictors of Eating Disorder Symptoms*

		<i>SE b</i>	<i>b</i>	$\beta$	<i>t</i>	<i>Sig.</i>
Step	Variables Entered					
I.	Constant	.08	1.47	-	17.85	.000
	BMI	.02	.09	.23	4.32	.000
	BDI-2	.01	.05	.31	5.82	.000
II.	Constant	.08	1.47	-	17.81	.000
	BMI	.02	.09	.23	4.19	.000
	BDI-2	.01	.05	.33	4.64	.000
	Task Coping	.01	.00	-.01	-.21	.836
	Emotion Coping	.01	-.01	-.06	-.80	.422
	Avoidant Coping	.02	.02	.09	1.55	.122
	Social Coping	.03	-.01	-.04	-.57	.571

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2.

Table 7

*Bootstrapping Results for Coping Style Predictors of Eating Disorder Symptoms*

<i>Variable</i>	<i>Mean <math>\beta</math></i>	<i>95% CI</i>	
		<i>Lower Bound</i>	<i>Upper Bound</i>
BMI	.22	.11	.33
BDI-2	.36	.20	.53
Task Coping	-.01	-.17	.15
Emotion Coping	-.10	-.29	.08
Social Coping	-.06	-.24	.13
Avoidant Coping	.12	-.03	.27

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval; BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2.

### *Body Dissatisfaction*

The third regression examined the four coping styles as predictors of body dissatisfaction, which was measured with the Body-Image Ideals Questionnaire (Table 8). Perceived relationship satisfaction was not a significant covariate, and was removed from the regression, which was re-run. When the four remaining covariates (BMI, depression, anxiety, and self-esteem) were entered into the first block of the model, the model significantly predicted body dissatisfaction ( $F(3)= 40.00, p < .001$ ) and accounted for 35.6% of the variance. Including the coping style predictors in the second step of the model did not contribute to its predictive power, as this step was not significant ( $F(7)= .95, p = .44$ ), accounting for an additional 0.8% of the variance. The complete model accounted for 36.5% of the variance in body dissatisfaction.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 8). The four covariates contributed significantly to the model when both blocks were included ( $ps \leq .045$ ). No coping style significantly contributed to the model, although avoidant coping style was the strongest predictor of body dissatisfaction as predicted,  $t(7) = 1.49, p = .14$ .

The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients. The results of the bootstrapping supported the results of the regression, with the complete model accounting for 38.4% of the variance in body dissatisfaction,  $R^2 = .38, 95\% \text{ CI } [.31, .51]$ . Three significant covariates from the original regression contributing significantly to the model, and there were no significant coping style predictors (Table 8). The covariate of anxiety was not a significant contributor based on the standardized beta coefficient, which is the value of the predictor considering the impact of the other predictors, but not the direct relationship

between covariate and DV (Lorenzo-Seva et al., 2010). However, the structure coefficient estimates the relative importance of a predictor outside of the context of the other predictors (Johnson, 2000), and the structure coefficient of anxiety was a significant contributor to the model, 95% CI [.75, .92]. This shows that the anxiety covariate is not a significant predictor of body dissatisfaction on its own, as its predictive power is absorbed by the other covariates and IVs. The results of the bootstrapping approximated the results of the original regression analyses, thus supporting the validity of the regression model.

Table 8

*Coping Style Predictors of Body Dissatisfaction*

		<i>SE b</i>	<i>b</i>	$\beta$	<i>t</i>	<i>Sig.</i>
Step	Variables Entered					
I.	Constant	.07	1.62	-	23.72	.000
	BMI	.02	.06	.18	3.70	.000
	STAI-Y (Trait)	.22	.40	.16	1.81	.072
	BDI-2	.01	.04	.24	3.46	.001
	RSES	.02	-.07	-.25	-3.45	.001
II.	Constant	.07	1.62	-	23.71	.000
	BMI	.02	.06	.17	3.54	.000
	STAI-Y (Trait)	.25	.49	.19	2.02	.045
	BDI-2	.01	.04	.26	3.65	.000
	RSES	.02	-.07	-.25	-3.28	.001
	Task Coping	.01	.00	-.02	-.37	.715
	Emotion Coping	.01	-.01	-.10	-1.45	.147
	Avoidant Coping	.01	.02	.08	1.49	.136
	Social Coping	.02	-.01	-.02	-.25	.801

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y.

Table 9

*Bootstrapping Results for Coping Style Predictors of Body Dissatisfaction*

<i>Variable</i>	<i>Mean <math>\beta</math></i>	<i>95% CI</i>	
		<i>Lower Bound</i>	<i>Upper Bound</i>
STAI-Y	.16	-.20	.53
BMI	.16	.07	.26
BDI-2	.27	.09	.45
RSES	-.31	-.58	-.09
Task Coping	.00	-.16	.15
Emotion Coping	-.16	-.37	.04
Social Coping	-.03	-.19	.15
Avoidant Coping	.11	-.04	.24

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval; BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y.



## Hypothesis Two

It was hypothesized that elevated levels of avoidant coping, romantic stress, and investment in appearance for self-definition (self-evaluative salience) would interact to predict higher ED symptoms and attitudes, as well as body dissatisfaction. The five covariates were force-entered in the first block of the hierarchical regression. To test the second hypothesis, the predictor variables of self-evaluative salience, avoidant coping style, and romantic stress, as well as their two-way and three-way interaction terms were entered in the second block of the hierarchical regression. All nonsignificant covariates were removed from the model, and the regression was subsequently re-run. Simple slopes analyses were calculated to interpret all two-way and three-way interactions. Significant three-way interactions were interpreted through examining two-way interactions within the context of the three-way interaction.

### *Eating Disorder Attitudes*

The first regression examined the predictive value of avoidant coping style, self-evaluative salience, and romantic stress, and the two-way and three-way interactions between those predictors in explaining the variance of ED attitudes (Table 10). Perceived relationship satisfaction was not a significant covariate and was removed from the regression model. When the four remaining covariates (BMI, depression, self-esteem, and anxiety) were entered into the first block of the model, the model significantly predicted ED attitudes,  $F(3) = 131.94, p < .001$ , and accounted for 64.6% of the variance. When the predictors of avoidant coping style, self-evaluative salience, romantic stress, and their respective two-way and three-way interaction terms were included in the second step of the model, this step significantly predicted ED attitudes,  $F(10) = 6.01, p < .001$ , and

accounted for an additional 4.6% of the variance. The complete model accounted for 69.2% of the variance in ED attitudes.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 10). All four of the included covariates contributed significantly to the model ( $ps \leq .001$ ). Romantic stress,  $t(10) = 3.59$ ,  $p < .001$ , and self-evaluative salience,  $t(10) = 3.83$ ,  $p < .001$ , were both significant predictors of ED attitudes, as was their interaction. No other interaction terms were significant.

Specifically, the interaction between romantic stress and self-evaluative salience was a significant predictor of ED attitudes,  $t(10) = -2.58$ ,  $p = .011$ , with a semi-partial correlation of .007, which indicates that removal of this interacting term would decrease the  $R^2$  by the same amount, or 0.7% of the variance accounted for in ED attitudes.

Table 10

*Predictors of Eating Disorder Attitudes*

		<i>SE b</i>	<i>b</i>	$\beta$	T	Sig.
Step	Variables Entered					
I.	Constant	1.97	164.71	-	83.43	.000
	BMI	.48	1.56	.11	3.25	.001
	STAI-Y (Trait)	6.45	43.57	.43	6.75	.000
	BDI-2	.29	1.32	.23	4.52	.000
	RSES	.61	-2.48	-.22	-4.09	.000
II.	Constant	2.02	167.10	-	82.89	.000
	BMI	.46	1.49	.11	3.26	.001
	STAI-Y (Trait)	6.30	35.86	.36	5.70	.000
	BDI-2	.28	1.17	.20	4.14	.000
	RSES	.60	-1.80	-.16	-3.02	.003
	PQ (Romantic)	2.58	9.28	.14	3.59	.000
	ASI-R (SES)	3.41	13.03	.16	3.83	.000
	CISS (Avoid)	.35	.26	.03	.72	.470
	Romantic x SES	3.06	-7.89	-.09	-2.58	.011
	Romantic x Avoid	.42	-.25	-.02	-.59	.555
	SES x Avoid	.54	-.60	-.05	-1.11	.269
	Romantic x SES x Avoid	.54	-.21	-.02	-.38	.704

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Salience subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.

The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients (Table 11). The results of the bootstrapping supported the results of the regression, with the complete model accounting for 71.3% of the variance in ED attitudes,  $R^2 = .71$ , 95% CI [.63, .81]. Three of the four significant covariates from the original regression (BMI, anxiety, and depression) contributed significantly to the model. The covariate of self-esteem was not a significant contributor based on the standardized beta coefficient, which is the value of the predictor considering the impact of the other predictors, but not the direct relationship between covariate and DV (Lorenzo-Seva et al., 2010). However, the structure coefficient estimates the relative importance of a predictor outside of the context of the other predictors (Johnson, 2000), and the structure coefficient of self-esteem was a significant contributor to the model, 95% CI [-.91, -.78]. This means that the self-esteem covariate is not a significant predictor of ED attitudes on its own, as its predictive power is absorbed by the other covariates and IVs. As in the original regression, the predictors of romantic stress, self-evaluative salience, and the interaction term between romantic stress and self-evaluative salience were all significant contributors to the model (Table 11). There were no significant differences between the results of the original regression and the bootstrapping trials, outside of the self-esteem covariate. The results of the bootstrapping mostly approximated the results of the original regression analyses, thus supporting the validity of the regression model.

Simple slopes analyses were conducted to further explore the interaction between self-evaluative salience and romantic stress. The outcome variable of ED attitudes was investigated at three values of romantic stress (the centered mean of zero, one standard deviation above the mean, and one standard deviation below the mean) and two values of

self-evaluative salience (one standard deviation above the centered mean, and one standard deviation below). In calculating simple slopes, a common higher level of a variable is one standard deviation above the centered mean, whereas a common lower level of a variable is one standard deviation below the centered mean (Cohen, et al., 2003). Only two values of self-evaluative salience were chosen in comparison to three values of romantic stress. This is because moderate levels of romantic stress are practically and theoretically more meaningful than moderate levels of self-evaluative salience. The simple slopes equations were graphed in order to visually examine the interaction effect (Figure 1). A *t*-test was then performed to determine whether the simple slopes significantly deviated from zero.

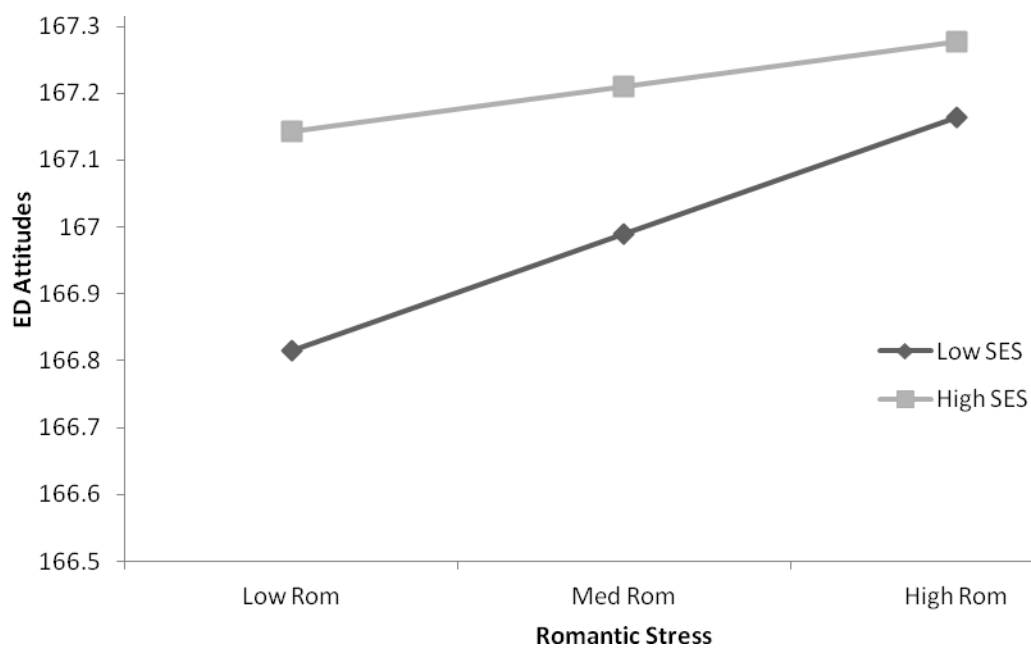
Simple slopes analyses indicated that the interaction between romantic stress and self-evaluative salience produced the highest Eating Disorder Inventory-2 scores when self-evaluative salience and romantic stress were both high, with Eating Disorder Inventory-2 scores increasing as romantic stress and self-evaluative salience increased. However, the simple slopes of the interaction effect were not significantly different from zero ( $p > .05$ ), which fits with the relatively small semi-partial correlation of the two-way interaction term. Contrary to predictions, the three-way interaction term did not contribute significantly to the model ( $p = .704$ ).

Table 11

*Bootstrapping Results for Predictors of Eating Disorder Attitudes*

Variable	Mean $\beta$	95% CI	
		Lower Bound	Upper Bound
BMI	.11	.05	.17
STAI-Y (Trait)	.39	.14	.63
BDI-2	.17	.03	.31
RSES	-.14	-.31	.02
PQ (Romantic)	.15	.05	.24
ASI-R (SES)	.15	.05	.26
CISS (Avoid)	.03	-.05	.14
Romantic x SES	-.09	-.18	-.01
Romantic x Avoid	-.02	-.10	.06
SES x Avoid	-.05	-.16	.05
Romantic x SES x Avoid	-.03	-.16	.07

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval; BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; STAI-Y = State-Trait Anxiety Inventory Form Y; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Saliency subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.



*Figure 1.* Simple slopes of the interaction between romantic stress (Rom) and self-evaluative salience (SES) in predicting ED attitudes.

*Note.* Rom = Romantic Stress; SES = Self-Evaluative Salience; ED = Eating Disorder.

The black line represents the simple slopes equation for low self-evaluative salience (one standard deviation below the mean). The grey line represents the simple slopes equations for high self-evaluative salience (one standard deviation above the mean).

### *Eating Disorder Symptoms*

The second regression examined the predictive value of avoidant coping style, self-evaluative salience, and romantic stress, and the two-way and three-way interactions between those predictors in explaining the variance of ED symptoms (Table 12). The covariates of anxiety, self-esteem, and perceived relationship satisfaction were not significant contributors to the model, so they were removed from the analyses and the regression was re-run. When the two covariates (BMI and depression) were entered into the first block of the model, the model was significant in predicting ED symptoms ( $F=27.31, p < .001$ ) and accounted for 15.8% of the variance. The predictors of avoidant coping style, self-evaluative salience, and romantic stress, as well as their respective two-way and three-way interaction terms were added in the second step of the model. This step was significant,  $F(6) = 5.55, p < .001$ , and contributed further to the model's predictive power, while accounting for an additional 10.1% of the variance. The complete model accounted for 25.9% of the variance in ED symptoms.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 12). The two covariates contributed significantly to the model ( $p \leq .001$ ). Self-evaluative salience was the only significant positive predictor of ED symptoms,  $t(8) = 5.38, p < .001$ . As predicted, the three-way interaction term between romantic stress, self-evaluative salience, and avoidant coping style was also significant,  $t(8) = -2.84, p = .005$ . The semi-partial correlation of the three-way interaction term was .002, which indicates that removal of the three-way interaction will decrease  $R^2$  by the same amount, or 0.2% of the variance accounted for in ED symptoms. The 0.2% of the variance accounted for by the three-way interaction term is relatively minor in comparison to the 10.1% of variance in ED symptoms explained by all IVs and



interaction terms, and the 25.9% of variance in ED symptoms explained by the two significant covariates.

Table 12

*Predictors of Eating Disorder Symptoms*

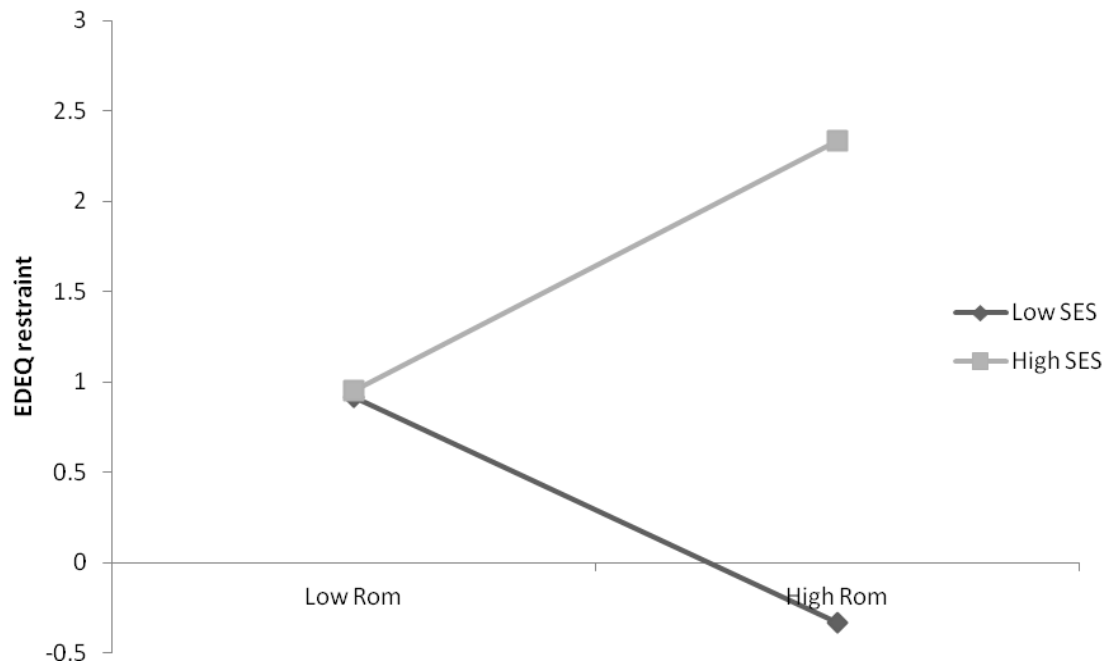
		<i>SE b</i>	<i>b</i>	$\beta$	T	Sig.
Step	Variables Entered					
I.	Constant	.08	1.47	-	17.85	.000
	BMI	.02	.09	.23	4.32	.000
	BDI-2	.01	.05	.31	5.82	.000
II.	Constant	.08	1.49	-	17.68	.000
	BMI	.02	.08	.22	4.21	.000
	BDI-2	.01	.03	.21	3.51	.001
	PQ (Romantic)	.11	-.13	-.07	-1.16	.246
	ASI-R (SES)	.13	.70	.32	5.38	.000
	CISS (Avoid)	.02	.02	.09	1.51	.132
	Romantic x SES	.13	.09	.04	.72	.472
	Romantic x Avoid	.02	-.01	-.02	-.31	.759
	SES x Avoid	.02	-.04	-.11	-1.76	.080
	Romantic x SES x Avoid	.02	-.07	-.18	-2.84	.005

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Salience subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.

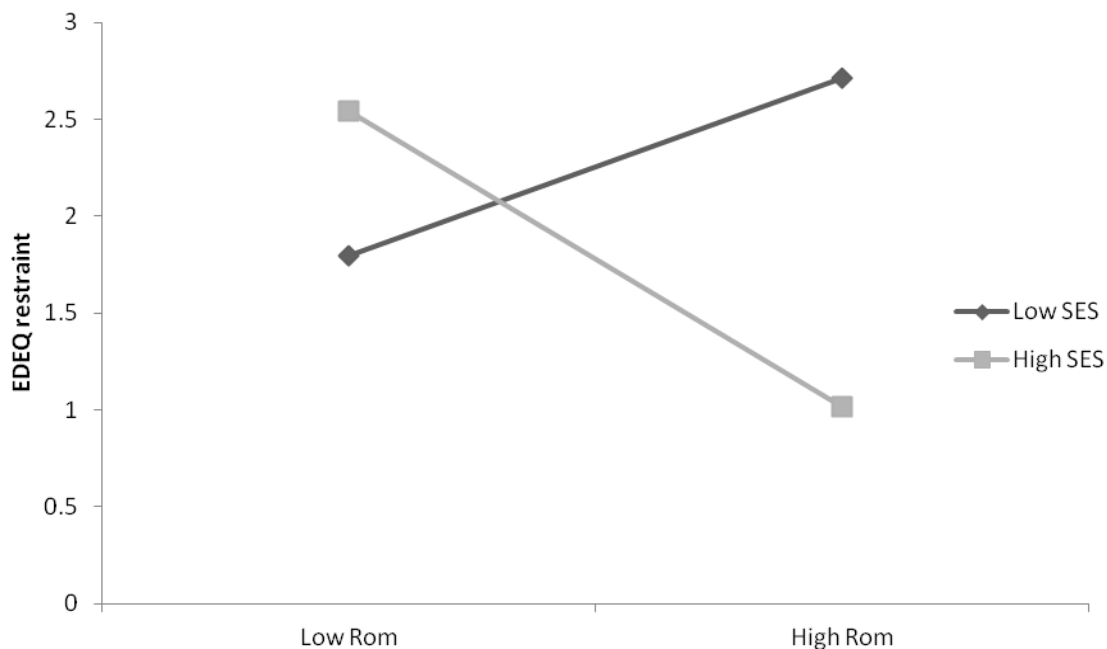
The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients (Table 13). The results of the bootstrapping supported the results of the original regression, with the complete model accounting for 22.7% of the variance in ED symptoms,  $R^2 = .23$ , 95% CI [.17, .35]. The two significant covariates from the original regression contributed significantly to the model. As was found in the original regression, the predictor of self-evaluative salience was a significant contributor to the model. The three-way interaction term between romantic stress, avoidant coping style, and self-evaluative salience was also a significant predictor. The results of the bootstrapping approximated the results of the original regression analyses, supporting the validity of the regression model.

Simple slopes analyses were conducted in accordance with Aiken and West (1991) to further explore the interaction. The analyses investigated the effect of the interaction between romantic stress and self-evaluative salience on ED symptoms at high and low levels of avoidant coping (respectively, one standard deviation below and above the centered mean). Simple slope equations were calculated for the four combinations of higher and lower romantic stress and self-evaluative salience. The simple slopes equations were graphed in order to visually examine the interaction effect (Figure 2, Figure 3). At low levels of avoidant coping, low levels of self-evaluative salience combined with high romantic stress were associated with lower ED symptoms (Figure 2). At low levels of avoidant coping, high self-evaluative salience and high romantic stress were associated with high ED symptoms (Figure 2). Again within low levels of avoidant coping, both individuals high and low in self-evaluative salience, when under low romantic stress, reported virtually identical levels of ED symptoms (Figure 2). At high levels of avoidant coping, low levels of self-evaluative salience combined with romantic

stress were associated with increasing levels of ED symptoms (Figure 3). Still at high levels of avoidant coping, high levels of self-evaluative salience combined with high romantic stress were associated with decreasing levels of ED symptoms (Figure 3). Then, *t*-tests were performed to determine whether the simple slopes significantly deviated from zero. None of the simple slopes in the three-way interaction were significantly different from zero ( $p > .05$ ), which is consistent with the relatively small semi-partial correlation of the three-way interaction term and the variable coefficient in the original regression model. The direction of the three-way interaction was also contrary to predictions. The individuals who reported high levels of self-evaluative salience, romantic stress, and avoidant coping style were not the individuals who reported the highest levels of ED symptoms. Rather, the interaction between self-evaluative salience, romantic stress, and avoidant coping style was more complicated, with no one significant subgroup of individuals reporting the highest levels of ED symptoms.



*Figure 2.* Simple slopes of the interaction between romantic stress and self-evaluative salience style at low levels of avoidant coping (one standard deviation below the mean).  
*Note.* Rom = Romantic stress; SES = Self-Evaluative Salience; EDEQ restraint = Eating Disorder Examination Questionnaire – Restraint Subscale. The black line represents the simple slopes equation for low self-evaluative salience endorsement (one standard deviation below the mean). The grey line represents the simple slopes equation for high self-evaluative salience endorsement (one standard deviation above the mean).



*Figure 3.* Simple slopes of the interaction between romantic stress and self-evaluative salience style at high levels of avoidant coping (one standard deviation below the mean).  
*Note.* Rom = Romantic stress; SES = Self-Evaluative Salience; EDEQ restraint = Eating Disorder Examination Questionnaire – Restraint Subscale. The black line represents the simple slopes equation for low self-evaluative salience endorsement (one standard deviation below the mean). The grey line represents the simple slopes equation for high self-evaluative salience endorsement (one standard deviation above the mean).

Table 13

*Bootstrapping Results for Predictors of Eating Disorder Symptoms*

Variable	Mean $\beta$	95% CI	
		Lower Bound	Upper Bound
BMI	.22	.11	.34
BDI-2	.21	.07	.35
PQ (Romantic)	-.13	-.27	.01
ASI-R (SES)	.29	.17	.44
CISS (Avoid)	.09	-.05	.23
Romantic x SES	.02	-.11	.14
Romantic x Avoid	-.01	-.14	.10
SES x Avoid	-.09	-.21	.05
Romantic x SES x Avoid	-.17	-.31	-.01

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval. BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; STAI-Y = State-Trait Anxiety Inventory Form Y; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Salience subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.

### *Body Dissatisfaction*

The third regression examined the predictive value of avoidant coping style, self-evaluative salience, and romantic stress, and the two-way and three-way interactions between those predictors in explaining the variance of body dissatisfaction (Table 14). As the covariates of anxiety and perceived relationship satisfaction were not significant contributors to the model, they were removed from the analyses and the regression was re-run. When the three remaining covariates (BMI, depression, and self-esteem) were entered into the first block of the model, the model was significant in predicting body dissatisfaction,  $F(2) = 51.84, p < .001$ , and accounted for 34.9% of the variance. The predictors of avoidant coping style, self-evaluative salience, and romantic stress, as well as their respective two-way and three-way interaction terms were added in the second step of the model. This step was significant and contributed further to the model's predictive power,  $F(6) = 3.63, p = .001$ , and accounted for an additional 5.4% of the variance. The complete model accounted for 40.3% of the variance in body dissatisfaction.

Subsequently, each predictor was examined to determine whether it significantly contributed to the model (Table 14). The three covariates contributed significantly to the model ( $p \leq .001$ ). Self-evaluative salience positively predicted body dissatisfaction,  $t(9) = 3.82, p < .001$ . The interaction between self-evaluative salience and avoidant coping style was a significant predictor of body dissatisfaction,  $t(9) = 2.39, p = .018$ . The semi-partial correlation of the two-way interaction between self-evaluative salience and avoidant coping style was .012, which indicates that removal of this interaction term would decrease  $R^2$  by the same amount, or 1.2% of the variance accounted for in body dissatisfaction.



The regression was re-run with 1000 bootstrap trials, and 95% confidence intervals were calculated for the regression coefficients (Table 15). The results of the bootstrapping supported the results of the regression, with the complete model accounting for 41.9% of the variance in body dissatisfaction,  $R^2 = .42$ , 95% CI [.35, .54]. The three significant covariates from the original regression contributed significantly to the model. As in to the original regression, the predictor of self-evaluative salience was a significant contributor to the model (Table 15). The interaction between self-evaluative salience and avoidant coping style was significant in the original regression, but its standardized beta coefficient was not significant in the bootstrapped model. The trustworthiness of the significant interaction term in the original regression is questionable, considering the non-normality of the BMI and depression covariates. The bootstrapping technique was used in this study due to that non-normality. The results of the bootstrapping would be considered more trustworthy than those of the original regression, considering the lack of reliance on normal distributions in the bootstrapping technique. As such, the interaction between self-evaluative salience and avoidant coping was not considered significant or interpretable. There were no other significant differences between the results of the original regression and the bootstrapping trials. The results of the bootstrapping mostly approximated the results of the original regression analyses, providing support for the validity of the regression model. In both the original regression and the bootstrapped regression, the three-way interaction term did not contribute significantly to the model.

Table 14

*Predictors of Body Dissatisfaction*

		<i>SE b</i>	<i>B</i>	$\beta$	<i>t</i>	<i>Sig.</i>
Step	Variables Entered					
I.	Constant	.07	1.62	-	23.63	.000
	BMI	.02	.06	.17	3.65	.000
	BDI-2	.01	.05	.30	5.18	.000
	RSES	.02	-.10	-.34	-5.79	.000
II.	Constant	.07	1.62	-	22.47	.000
	BMI	.02	.06	.17	3.71	.000
	BDI-2	.01	.04	.26	4.36	.000
	RSES	.02	-.07	-.24	-3.78	.000
	PQ (Romantic)	.09	.06	.03	.61	.544
	ASI-R (SES)	.12	.46	.22	3.82	.000
	CISS (Avoid)	.01	.00	-.01	-.18	.857
	Romantic x SES	.11	-.08	-.04	-.72	.472
	Romantic x Avoid	.02	-.03	-.09	1.72	.087
	SES x Avoid	.02	.05	.13	2.39	.018
	Romantic x SES x Avoid	.02	.03	.08	1.36	.175

*Note.*  $N = 294$ . BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Salience subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.

Table 15

*Bootstrapping Results for Predictors of Body Dissatisfaction*

<i>Variable</i>	<i>Mean <math>\beta</math></i>	<i>95% CI</i>	
		<i>Lower Bound</i>	<i>Upper Bound</i>
BMI	.17	.08	.26
BDI-2	.24	.08	.38
RSES	-.25	-.42	-.10
PQ (Romantic)	.02	-.12	.15
ASI-R (SES)	.22	.09	.37
CISS (Avoid)	-.01	-.13	.13
Romantic x SES	-.03	-.15	.08
Romantic x Avoid	-.10	-.20	.03
SES x Avoid	.14	-.01	.26
Romantic x SES x Avoid	.08	-.09	.21

*Note.*  $N = 294$ ;  $k = 1000$ ; CI = Confidence interval. BMI = Body Mass Index; BDI-2 = Beck Depression Inventory-2; RSES = Rosenberg Self-Esteem Scale; CISS = Coping Inventory for Stressful Situations; Avoid = Avoidant Coping subscale; ASI-R = Appearance Schemas Inventory-Revised; SES = Self-Evaluative Salience subscale; PQ = Problem Questionnaire; Romantic = Romantic Relationship Stress.

Table 16

*Summary of Hypotheses, Statistical Procedures, and Results*

Hypothesis	Statistical Procedure – Hierarchical Regression			Results
	Dependent Variable	Significant Covariates	Predictor of Interest	
1. Avoidant coping will be the coping style which has the strongest relation to ED symptoms and attitudes, as well as to body dissatisfaction.	ED Attitudes = Regression # 1	BMI, Anxiety, Depression, Trait Self-Esteem	Avoidant Coping	Supported
	ED Symptoms = Regression #2	BMI and Depression	Avoidant Coping	Not Supported
	Body Dissatisfaction = Regression # 3	BMI, Depression, Anxiety, Trait Self-Esteem	Avoidant Coping	Not Supported
2. Elevated levels of avoidant coping, romantic stress, and self-evaluative salience will interact to predict levels of ED symptoms and attitudes, as well as body dissatisfaction. Individuals who predominantly cope through avoidance and place a high value on their appearance will focus on managing their appearance by engaging in ED symptoms, when threatened with the highly relevant stressor of romantic stress, compared to individuals who predominantly utilize alternate styles of coping or who place less value on their appearance.	ED Attitudes = Regression # 4	BMI, Anxiety, Depression, Trait Self-Esteem	Three-way Interaction	High levels of romantic stress and self-evaluative salience interacted to predict the highest levels of ED attitudes.
	ED Symptoms = Regression #5	BMI and Depression	Three-way Interaction	Contrary to predictions, high SES, high avoidant coping style, and high romantic stress did not predict the highest ED symptom level.
	Body Dissatisfaction = Regression # 6	BMI, Depression, Trait Self-Esteem	Three-way Interaction	Not Supported

## CHAPTER IV

### DISCUSSION

#### **Hypothesis 1**

Hypothesis 1 predicted that women who engage predominantly in avoidant coping would report higher levels of ED symptoms, ED attitudes, and body dissatisfaction than would women who engaged predominantly in social distraction coping, task coping, or emotion coping. This hypothesis was partially supported. Greater endorsement of avoidant coping was correlated with higher levels of ED attitudes. However, avoidant coping did not significantly predict body dissatisfaction or ED symptoms. None of the other coping styles were significant predictors of ED symptoms, ED attitudes, or body dissatisfaction.

The positive relationship found between ED attitudes and avoidant coping in the current study is consistent with past research (e.g., Corstorphine et al., 2006; Garcia-Grau et al., 2002). However, the current study provides support for the relationship between avoidant coping and ED attitudes after controlling for depression. In contrast, many of the previous studies reporting this relationship did not account for depression (Corstorphine et al., 2006; Koff & Sangani, 1997; Troop et al., 1998). Because depression may actually explain the relationship between avoidant coping and ED attitudes (Paxton & Diggins, 1997), failure to control for depression represents a significant limitation in previous studies. Paxton and Diggins (1997) found that controlling for depression in a typical undergraduate sample eliminated the relationship between avoidant coping and ED attitudes. They theorized that avoidant coping may have been confounded with depression in previous studies, as avoidant coping had a negligible effect once depression was included as a covariate (Paxton & Diggins, 1997). In the present study, depression was

included as a covariate, yet a significant correlation was found between avoidant coping style and ED attitudes. As such, this study contributes to the literature in supporting the impact of avoidant coping on ED attitudes, above and beyond that of depression.

This study did not find a significant relationship between avoidant coping style and ED symptoms, as measured by the Restraint subscale of the Eating Disorder Examination Questionnaire. The inconsistency between the nonsignificant findings in the present study and previous work which found a significant relationship could be attributed partly to differences in measurement. Many past studies which have found a relationship between avoidant coping style and ED symptoms used measures which assessed both ED attitudes and ED symptoms, but were employed as measures of only ED behaviour or symptoms. Specifically, numerous studies (e.g., Bennett & Cooper, 2001; Wonderlich-Tierney & Vander Wal, 2010; Yager et al., 1995) used the Eating Attitudes Test as a measure of ED behaviours and symptoms, although the measure is intended for use as a measure of ED attitudes, including weight concerns, body image, and related psychological symptoms (Garner, Olmstead, Bohr, & Garfinkel, 1982). In addition, the EDI-2 is often interpreted as a measure of ED symptomatology rather than ED attitudes alone (e.g., Van Boven & Espelage, 2006). The items in the Eating Disorder Inventory-2 are more accurately understood as tapping into disordered eating attitudes rather than specific symptoms and behaviours. ED symptoms were assessed in this study with the Restraint subscale of the Eating Disorder Examination Questionnaire, which is a targeted measure of disordered eating restraint. The Restraint subscale was most representative of ED symptoms, directly questioning the individual's endorsement of specific ED behaviour (e.g., Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?) as opposed to the

three other subscales of Weight Concern, Eating Concern, and Shape concern, whose items target body image attitudes and disordered eating attitudes (e.g., Have you had a strong desire to lose weight?). Further, the Restraint subscale was more statistically valid than the subscale comprised of the specific behavioural items in the Eating Disorder Examination Questionnaire. As such, the specific behaviour subscale could not be retained, although its items were representative of ED symptom behaviour.

Although the significant results of some studies could be attributed to the different use of measures, avoidant coping also was associated with elevated ED behaviour in a study using the Eating Disorder Examination (Turner, Bryant-Waugh, & Peveler, 2009). The Eating Disorder Examination is a semi-structured interview which evaluates all behaviour associated with ED. The significant relationship between avoidant coping and ED behaviour in the specific study by Turner and colleagues (2009) may be a product of the more thorough evaluation of ED behaviour in the Eating Disorder Examination (Cooper & Fairburn, 1987). In the present study, the Eating Disorder Examination Questionnaire was used due to its comparatively brief and self-report nature, in contrast to the comprehensive but much more time-consuming clinical interview format of the Eating Disorder Examination. The non-significance of the relationship between avoidant coping style and ED symptoms in this study, in contrast to past studies, may be attributed to differences in measurement of the ED symptom variable in this study compared to past work.

This is the first study to investigate the relationship between a general avoidant coping style and body dissatisfaction as measured by the Body-Image Ideals Questionnaire, which measures the discrepancy between one's ideal appearance and perceived real appearance. No significant correlation was found between avoidant coping

and body dissatisfaction in this study. This conflicted with the findings of Cash et al. (2005), who did find a significant correlation between the Body-Image Ideals Questionnaire and the Avoidance subscale of the Body Image Coping Strategies Inventory (BICSI). The difference in results may be attributed to the focus of the specific measures used. The avoidance subscale used by Cash et al. (2005) focuses on avoidance coping used in the context of body image threats or challenges. The present study employed the Avoidant Coping subscale of the Coping Inventory for Stressful Situations, which assesses the use of avoidant coping style as a general tendency, across all stressful situations. However, individuals may use a variety of specific coping strategies regardless of their predominant coping style (Fitzsimmons & Bardone-Cone, 2011). The results of Cash et al. (2005) depicted the relationship between avoidant coping and body dissatisfaction in the more specific context of body image related strategies. As such, one possible interpretation is that avoidant coping style is only significantly correlated to body dissatisfaction when used in the context of body image stressors, as found by Cash et al. (2005). Further research would be required to support this interpretation. Specifically, it would be necessary to investigate avoidant coping style in both a general context and in more specific contexts, including in conditions more relevant to EDs such as body image threats.

## **Hypothesis 2**

The second hypothesis stated that individuals who reported the greatest levels of romantic stress and investment in appearance for self-definition, and who had the highest endorsement of avoidant coping style, would report the highest levels of ED symptoms, ED attitudes, and body dissatisfaction. Only one significant three-way interaction was found. Individuals with low self-evaluative salience responded as expected: elevations in



both avoidant coping style and romantic stress were correlated with higher ED symptomatology. Contrary to predictions, however, individuals who reported high self-evaluative salience did not respond as expected. For these individuals, as the level of perceived romantic stress increased, participants higher in avoidant coping reported decreasing ED symptoms, whereas those who reported lower levels of avoidant coping reported increasing ED symptoms.

#### *Eating Disorder Attitudes*

It was hypothesized that individuals who reported the highest levels of self-evaluative salience, romantic stress, and avoidant coping style would also report the highest levels of ED attitudes. This predicted three-way interaction was not significant. Rather, a two-way interaction was significant such that individuals who reported higher levels of self-evaluative salience and romantic stress also reported the highest levels of ED attitudes. The degree to which ED attitudes were endorsed in relation to differences in perceived romantic stress levels was more drastically different for low self-evaluative salience individuals in comparison to high self-evaluative salience individuals. Contrary to predictions, the three-way interaction term was not significant.

Based on a review of relevant literature, there have been no prior studies examining the effect of a combination of self-evaluative salience and romantic stress on ED attitudes. Individually, both predictors have been connected to attitudes associated with eating disorders. Self-evaluative salience has been found to correlate with increased body dissatisfaction and internalization of the thin ideal (Cash et al., 2004a), as well as cognitive distortions related to body image (Jakatdar, Cash, & Engle, 2006). A connection can also be made between romantic stress and ED attitudes in past research, which has supported the importance of appearance to romantic attraction (Smith et al., 1990) and the

correlation between attractiveness with romantic relationship success (Deaux & Hannah, 1984). When a woman perceives that her partner views her body negatively, relationship satisfaction and outcome become more negative (Morrison et al., 2009). As such, attitudes associated with eating disorders can be connected to romantic stress.

The results of the present study show that elevations in romantic stress and self-evaluative salience interacted to predict the highest endorsement of ED attitudes. However, visual examination of the simple slopes interaction graph show that individuals who are low in self-evaluative salience are more affected by fluctuations in perceived romantic stress than are high self-evaluative salience individuals (Figure 1). In general, high self-evaluative salience individuals reported more elevated ED attitudes regardless of their levels of romantic stress, but low self-evaluative salience individuals reported a greater increase in ED attitudes when they also perceived increasing romantic stress (Figure 1). Basing one's self-worth on one's appearance has been associated with negative effects such as lower self-esteem and greater body dissatisfaction in the long term (Cash et al., 2004a), as the standards of beauty held by modern society make it unrealistic for most women to achieve the ideal appearance (Nichter & Nichter, 1991). Regardless, appearance is a vital component of romantic relationships (Smith et al., 1990). Elevation in romantic stress can be attributed to any number of factors, but for individuals whose appearance is a key part of their identity, romantic stress may be more easily attributed to inadequacy in their appearance (Szymanski & Cash, 1995). This process of blaming physical appearance for romantic stress likely serves to reinforce and elevate negative attitudes and beliefs regarding appearance, including attitudes that are specifically related to eating disorders. High self-evaluative salience individuals appear to endorse a similar level of ED attitudes regardless of the perceived romantic stress, which

may be due to a strong attribution of stress to their appearance that is activated even when perceived stress levels are lower. As such, the main effects of self-evaluative salience and romantic stress would be more meaningful in this interpretation, with the interaction between the two variables a smaller factor. The simple slopes graph of the interaction implies that the low self-evaluative salience individuals are the ones who are most affected by romantic stress. Even if appearance is not a key schema or central to one's self-worth, appearance is still conventionally a key factor in romantic relationships (Smith et al., 1990). As such, increasing romantic stress may strengthen the attribution of romantic stress to appearance even in low self-evaluative salience individuals and thus elevate the endorsement of eating disorder attitudes, which are founded on dissatisfaction with, and overinvestment, in appearance. Thus, low self-evaluative salience participants' endorsement of ED attitudes may be more susceptible to fluctuation than that of high self-evaluative salience individuals who appear to chronically endorse higher levels of ED attitudes.

Elevated endorsement of ED attitudes is associated with engaging in ED behaviour, lower self-esteem, elevated stress responses, elevated perceived stress, depression, and ED symptoms (Cattanach et al., 1988; Engler et al., 2006; Johnson & Wardle, 2005; Stice, 2002). As such, it is important to understand how factors and resultant interactions between factors can potentiate ED attitudes. Past research has linked both romantic stress and self-evaluative salience to ED attitudes, but this is the first study to show that self-evaluative salience interacts with romantic stress to lead to the highest levels of ED attitudes. Further, this interaction helps conceptualize how self-schemas – in this instance, self-evaluative salience – and salient environmental factors interact to affect attitudes in an ED context. In this study, self-evaluative salience was a significant

predictor of body dissatisfaction and ED attitudes. Those who were low in self-evaluative salience were most significantly affected by increases in romantic stress in predicting ED attitudes, a construct which encompasses body dissatisfaction and other disordered attitudes common to ED.

One possible explanation for the non-significance of avoidant coping as a predictor of ED attitudes is that the relationship may only occur in individuals who have clinical levels of ED pathology. Thus, this relationship would not be found in a non-clinical sample of undergraduates. Previous studies of a clinical sample have found a positive relationship between avoidant coping and ED attitudes and behaviour (e.g., Corstorphine et al., 2006; Garcia-Grau et al., 2002). Two studies where ED attitudes were elevated when greater avoidant coping was endorsed involved comparing women who met ED criteria or were diagnosed with an ED to a control group (Corstorphine et al., 2006; Troop, Holbrey, Trowler, & Treasure, 1994), whereas the present study utilized a sample taken from a non-clinical population.

This study is the first to provide support for the combined influence of self-evaluative salience and romantic stress on ED attitudes. Further research replicating and investigating the interaction between self-evaluative salience and romantic stress and their influence on ED attitudes in clinical and sub-clinical populations in contrast to non-clinical samples will illuminate the changes or discontinuities in these predictor variables across different degrees of ED symptom severity. One intriguing avenue of future work would delve into the specifics of romantic stress as a predicting variable in this interaction. Investigating different measures of romantic stress, inducing or suggesting romantic stress in a laboratory setting, and qualitative comparisons of different forms of romantic stress would all be possibilities. As romantic stress has been found to decrease

with increasing age (Seiffge-Krenke, 2006), comparing otherwise homogenous samples of individuals at different age groups may provide unique insight on the interaction.

### *Eating Disorder Symptoms*

This study was the first exploration of the interaction among avoidant coping, self-evaluative salience, and romantic stress, three important precipitating factors in ED symptomatology. ED symptomatology has been thought to be a form of avoidant coping for some individuals (McManus & Waller, 1995). This study refined this hypothesis, predicting that ED symptomatology was a form of avoidant coping for individuals high in self-evaluative salience, when exposed to stressors that would be salient to the domain of appearance. Although no previous studies have directly investigated this three-way interaction and the combination of variables used in the present study, past research has suggested that a combination of stress and avoidant coping increases ED symptoms (Sherwood et al., 2000), and that self-evaluative salience is linked to body dissatisfaction (Cash et al., 2004a). Not all individuals avoid stress through engaging in ED behaviour, but it was hypothesized that the individuals who would do so would place a high value on their appearance, as a negative view of one's appearance is a primary factor in precipitating and potentiating ED (Thompson et al., 1999). This hypothesis was not supported. More specifically, avoidant coping did not predict ED symptomatology in the present study.

The simple slopes of the three-way interaction in the ED symptoms regression analyses (Figure 2, Figure 3) did not support the second hypothesis, as the highest level of ED symptoms was not reported by individuals who endorsed high romantic stress, high self-evaluative salience, and high avoidance coping. Instead, the highest levels of ED symptoms were found for individuals who reported low avoidant coping, high self-

evaluative salience, and higher romantic stress. Also contrary to expectations, the lowest levels of ED symptoms were reported by those with low avoidant coping, low self-evaluative salience, and high romantic stress (Figure 2). Moreover, no significant differences in mean level of ED symptoms were reported for individuals with low versus high levels of self-evaluative salience under low romantic stress among those in the low avoidance coping group (Figure 2). For individuals who reported high avoidant coping and increasing levels of romantic stress, ED symptoms decreased for those who also reported high self-evaluative salience reported decreasing whereas ED symptoms increased for those who also reported low self evaluative salience (Figure 3). These results are contrary to predictions, as within the high avoidance coping individuals, it is those with low (rather than high) self-evaluative salience who reported increased ED behaviour when under romantic stress. In order to explain the results in a logical and consistent manner, an alternate theory is necessary to explain the finding that avoidant coping was not predictive of ED symptoms in this non-clinical study sample.

The construct of self-evaluative salience is founded on the proposition of appearance schematicity, and how that varies between individuals. Specifically, some individuals more readily perceive appearance related information and are more likely to process information in appearance related terms (Cash et al., 2004a). Self-schemas that are more salient or central to an individual's identity are thought to affect information processing and behaviour more strongly than self-schemas that are less central to the self (Markus & Wurf, 1987). Markus and Wurf (1987) concluded that stimuli relevant to the more central self-aspects tend to be interpreted through the filter of those self-schemas. Appearance is considered a key component of romantic attraction and romantic relationships (Smith et al., 1990). Individuals who report high self-evaluative salience

would hold strong appearance self-schemas, as their appearance is a central aspect of their self-image (Markus & Wurf, 1987). Logic suggests that people who are high in self-evaluative salience would have a stronger tendency than most to interpret romantic stress through their appearance self-schemas, which are a central self-aspect for those individuals. The results in the present study can be explained based on this assertion.

The endorsement of high self-evaluative salience points to an individual who is highly appearance schematic, and holds appearance to be a central aspect of their self-concept. For individuals who endorsed high self-evaluative salience, the strong association between appearance and romantic stress suggests that they have a stronger tendency than most to attribute both positive and negative events in their romantic relationship to their appearance. Perceived romantic stress would be attributed by high self-evaluative salience individuals to deficiencies in their appearance, which some individuals may remedy through shape or weight management techniques that may fall into the category of ED symptomatology.

Keeping in mind the appearance schematic nature of high self-evaluative salience individuals, the inclusion of avoidant coping style clarifies when an individual would engage in ED symptomatology as a behavioural response to the activations of their appearance self-schemas. The individuals who endorsed high self-evaluative salience and low levels of avoidant coping may have compensated for romantic stress directly through ED symptoms, as they have a greater tendency to handle their stressors directly instead of through avoidance. Given that appearance consistent behaviour is part of their natural coping response to stress, high self-evaluative salience individuals who also are low in avoidance coping may more readily engage in appearance management behaviours, which include ED behaviours such as dieting. Thus, the appearance schematic

individuals who reported greater levels of romantic stress would also report more severe ED symptomatology when they have a lower endorsement of avoidant coping style (Figure 2).

Again considering the appearance schematic nature of the high self-evaluative salience individuals, those who are simultaneously high in avoidant coping style would maintain the same activation of their appearance self-schemas in the context of romantic stress. However, their tendency to avoid stressors would logically also correspond to a tendency to avoid self-aspects and domains to which they attribute these stressors and failures. In theory, this specific subgroup will activate their predominantly avoidant coping style when faced with romantic stress, such that those who reported high levels of perceived romantic stress will avoid the appearance domain and any corresponding weight or shape management behaviour in the process of avoiding the romantic stressor. This was reflected in the present study, where the high self-evaluative salience and high avoidant coping individuals reported decreasing levels of ED symptoms corresponding to increasing perceived romantic stress (Figure 3).

Theoretically, individuals who reported comparatively lower levels of self-evaluative salience will not have the same strong attribution of romantic stress to appearance, as appearance is not a crucial domain for their self-image. The subgroup of individuals who reported low self-evaluative salience and endorsed low levels of avoidant coping would resort to avoidant coping on a less frequent basis, allowing them a greater chance of dealing with any threatening stressor directly. Consequently, they would have a greater chance of handling that romantic stressor directly, and thus reduce their attention in other domains, including any normative weight or shape control behaviour which they are undertaking in favour of handling the more immediate and threatening stressor. This



was reflected in the present study, where low self-evaluative salience individuals who simultaneously reported low levels of avoidant coping style reported decreasing levels of ED symptoms parallel to increasing perceived romantic stress (Figure 2).

Individuals who reported comparatively lower levels of self-evaluative salience while simultaneously endorsing of high levels of avoidant coping will prefer to engage in alternate tasks when faced with a threatening stressor. These individuals will not have the strong attribution of romantic stress to appearance held by individuals who endorse higher levels of self-evaluative salience. Rather, these low self-evaluative salience and highly avoidant individuals may use ED symptoms as a means of distraction and stress avoidance when faced with a threatening stressor in their romantic relationship.

As a whole, the three-way interaction in the ED symptoms regression does not support the second hypothesis, where it was theorized that ED behaviour was a means of avoidant coping for the individuals who reported high levels of self-evaluative salience. The most logical explanation for these results involves the attribution of romantic stress to appearance for those high in self-evaluative salience, and thus engagement in ED behaviour based on the presence of avoidant coping style and level of perceived romantic stress. Thus, the second hypothesis in this study was not supported because ED symptoms were not used as a means of avoidant coping in this sample. A better explanation proposes ED symptoms as a means of appearance management, strongly associated with romantic stress for individuals who value appearance as an essential component of their self-image.

The lack of support for the second hypothesis may be attributed in part to the non-clinical population of typical undergraduate women from which this sample was taken, with very few individuals (1%) reaching criteria for ED. Many past studies of these

variables involved clinical samples, or comparisons of clinical ED groups to non-clinical or sub-clinical groups. Perhaps it is only clinical ED individuals who will use ED symptoms as a means of avoidant coping, which would explain why a relationship between these factors was not found in this study. This indicates a discontinuity between ED individuals who logically use ED as a means of avoidant coping, and the sample in this study who do not reach criteria for ED and do not use ED as a means of avoidant coping.

When distinguishing between clinical ED, sub-clinical ED, and non-ED individuals, some variables will separate them on a continuum, with ED individuals displaying a greater or lesser degree of a specific variable. Other variables will separate clinical ED, sub-clinical ED, and non-ED individuals into qualitatively different or discontinuous groups. The argument between ED as a continuous or discontinuous entity is a popular topic in ED research. Some researchers consider ED to be an extreme form of disordered eating on the other end of normal weight and eating concerns (Ruderman & Besbeas, 1992), and support the continuity model. Other researchers consider ED to be a discrete entity and qualitatively different from sub-clinical ED individuals and non-dieters (Gleaves, Brown, & Warren, 2004).

The continuity model focuses on the fundamental similarities between ED, sub-clinical ED, and normative weight concerns, placing them on a spectrum of severity with clinical ED as a more severe variant of normative weight concerns (Ruderman & Besbeas, 1992). Although the degree of ED pathology will change between each group, the type of pathology will not vary, given that the groups are variations on the same continuum (Tylka & Subich, 1999). However, a past study by Cooper and Turner (2000) found qualitative differences between individuals diagnosed with anorexia nervosa,

dieters, and non-dieters in their assumptions and beliefs about weight, appearance, eating, and shape. The variables that distinguished between anorexic and dieting individuals were different from the variables that distinguished dieting and non-dieting individuals, indicating qualitative differences between these groups (Cooper & Turner, 2000). This provides support for the discontinuity model for ED. The discontinuity model considers dieters and sub-clinical individuals to be qualitatively different from clinical ED individuals, with the latter reporting pathologies that are not present in non-clinical individuals (Gleaves et al., 2004). The discontinuity model suggests that ED symptomatology will not reach diagnosable levels unless other predisposing factors associated with clinical ED, but not with sub-clinical ED, are endorsed as well (Crisp, 1965). Eating disorders as a discontinuous entity are considered conceptually different from sub-clinical ED and normative dieting, with ED individuals endorsing specific characteristics that would not be present in sub-clinical and non-ED individuals (Gleaves et al., 2004).

The results of the present study suggest a qualitative difference between the reactions of clinical ED individuals based on past literature, and the reactions of the non-ED individuals in the present study sample, which would support the discontinuity model. Based on the literature review, ED behaviour was theorized to be a form of avoidant coping for ED individuals. However, the results suggest that ED behaviour was not used as means of avoidant coping in this study of a non-clinical sample. This can be attributed to a difference in the avoidant coping and ED symptomatology relationship in this sample compared to what would theoretically be found in a clinical sample, based on past work. Furthermore, in the present study, avoidant coping was not a positive correlate of ED symptomatology. As such, the initial theory of ED symptomatology as a means of

avoidant coping was not supported. Avoidant coping was not directly connected to ED symptomatology in the theorized manner, but the results indicated that there is a relationship with ED symptoms when self-evaluative salience and romantic stress are also taken into consideration.

The results of this study emphasize the importance of self-evaluative salience as a significant predictor of ED behaviour, ED attitudes, and body dissatisfaction. Clinical ED individuals report higher levels of self-evaluative salience than do non-clinical ED and control individuals (Hrabosky et al., 2009). Although all clinical ED individuals are high in self-evaluative salience by definition, not all individuals who are high in self-evaluative salience develop clinical eating disorders. Self-evaluative salience is a key characteristic of ED, but it is not the only required factor of ED development as measured in this study.

The difference between individuals who report high levels of self-evaluative salience and those who develop clinical ED was highlighted when comparing the ED attitudes analyses to the ED symptoms analyses. Elevated self-evaluative salience interacted with high romantic stress to produce the highest level of ED attitudes. As avoidant coping was not a factor, these results were partially in support of the second hypothesis. This result was not found in the ED symptoms regression, highlighting a difference between attitudes and behaviour. It appears that participants who reported high levels of ED attitudes do not necessarily express those attitudes in the form of ED behaviour. There was a continuous pattern between those who hold more disordered ED attitudes and those who hold less disordered ED attitudes, with those who held more disordered attitudes simultaneously endorsed higher self-evaluative salience, and those

who held less disordered ED attitudes simultaneously endorsed lower self-evaluative salience.

To summarize, ED attitudes and ED behaviours were not equally influenced by the factors of self-evaluative salience, romantic stress, and avoidant coping in this study. The ED attitudes construct varied almost as predicted in this non-clinical sample, similar to what would be expected in a clinical ED sample. However, ED behaviour was not endorsed as predicted in this non-clinical sample. ED and non-ED individuals are differentiated by the degree to which their ED attitudes are expressed through ED symptomatology. This difference between the changes in ED attitude and ED symptom endorsement across the sample was not a focus of this study, but would be an intriguing avenue of research. Although self-evaluative salience had a strong influence in generating ED attitudes in this study, there must be an additional influence which would combine to trigger ED symptomatology and behaviour. Further research exploring factors that differentiate ED attitude endorsement and ED behaviour endorsement will build a greater understanding of the qualitative difference between those who engaged in and those who refrained from ED behaviours, when both groups displayed elevated ED attitudes.

This study provided unique insight regarding the impact of self-evaluative salience on ED attitudes and ED behaviours as separate constructs, in a non-clinical population. As was expected, self-evaluative salience was associated with elevation of ED attitudes when there was an elevation of romantic stress, though avoidant coping was not a factor. However, self-evaluative salience was not adequate to trigger the expression of those ED attitudes in ED symptom behaviour. The results also added to the literature in supporting a strong association between appearance investment and romantic stress. Appearance and romantic stress have been shown to be inter-related, but this connection

is especially strong and salient for individuals who also derive their self-worth predominantly from their appearance. Further, this study provided support for the discontinuity model for ED, which theorizes that there are specific qualitative differences between ED and non-ED individuals (Ruderman & Besbeas, 1992). It was demonstrated that elevated self-evaluative salience does not necessarily equate to ED symptomatology, although clinical ED individuals tend to have higher self-evaluative salience than non-ED individuals (Hrabosky et al., 2009). Rather, high self-evaluative salience was associated with elevated ED attitudes, and the behavioural expression of those attitudes does not necessarily occur without the presence of another determining factor beyond the scope of this study. In the context of this study, there is a difference between the high self-evaluative salience individuals who endorse high levels of ED attitudes, and the high self-evaluative salience individuals who endorse high levels of ED attitudes and express those attitudes through ED symptomatology. Future investigations can further the study of this discontinuity between ED and non-ED individuals, aiming to identify factors in addition to self-evaluative salience which trigger the expression of ED attitudes through behaviour.

#### *Body Dissatisfaction*

Past research has found body dissatisfaction to be a primary precursor of ED symptoms (Barker & Galambos, 2007; Thompson et al., 1999). In differing research designs, other researchers have correlated both body dissatisfaction and ED symptoms to factors that increase ED vulnerability (Boyatzis & McConnell, 2006; Frank & Thomas, 2003). These two outcome variables tend to be highly interrelated (Berg, Frazier, & Sherr, 2009; Stice, 2002), with body dissatisfaction being a cognitive component of EDs

and symptomology a physical expression (4<sup>th</sup> ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000).

In this study, self-evaluative salience was correlated with body dissatisfaction. By definition, individuals who report elevated self-evaluative salience base their self-worth largely on their appearance (Cash et al., 2004a). Basing one's self-worth on one's appearance will typically have a negative effect, as most individuals will probably be dissatisfied with their appearance based on current standards of beauty. Endorsement of self-evaluative salience has been related to body dissatisfaction (Cash et al., 2004a), and this study provides additional support for such a relationship.

When individuals report elevated self-evaluative salience, it indicates that they utilize a self-schema where information about their appearance is processed in a self-evaluative manner, typically prompting a form of coping in reaction to that evaluation (Cash et al., 2004a). In the present study, all participants were engaged in a romantic relationship, an area where appearance is strongly valued (Smith et al., 1990).

Considering the interconnection between appearance and romantic relationships (Smith et al., 1990), individuals who report high levels of self-evaluative salience would process information from the romantic relationship in a manner biased towards their appearance. Ledoux, Winterrowd, Richardson, and Clark (2010) theorized that self-evaluative salience is related to negative self-focused beliefs, and insecure means of relating to others. For those individuals, this interpretation of stress would potentiate body dissatisfaction. Crucially, the elevated body dissatisfaction produced from such self-evaluation has been found to predict ED behaviour (Kim & Lennon, 2007).

The results of this study support the importance of the self-evaluative salience construct in understanding EDs, and factors that predict and potentiate ED pathology such

as body dissatisfaction. This study provides further support for continued investigation of this construct, in order to document how it relates to EDs and other factors that influence eating disorders. Individuals who endorse self-evaluative salience are at higher risk for ED pathology, and although there is a logical connection between self-evaluative salience and body dissatisfaction, this study provides concrete support for that relationship.

Contrary to predictions, neither avoidant coping nor romantic stress was a significant predictor of body dissatisfaction. As previously discussed for Hypothesis 1, general endorsement of avoidant coping style may not be significantly correlated to body dissatisfaction. It is plausible that avoidance coping style is only significantly correlated to body dissatisfaction when used in the context of body image stressors, as found by Cash et al. (2005).

Also contrary to predictions, romantic stress was not a significant predictor of body dissatisfaction, nor was the interactions of this variable with avoidant coping and self-evaluative salience. The absence of romantic stress as a significant predictor of body dissatisfaction in this study may be due to the specificity of the measures used. Morrison et al. (2009) found that the presence of negative relationship events, presumably a source of romantic stress, was correlated with a more negative body image. At the same time, greater disordered eating concerns, including a negative body image, were correlated with decreased relationship satisfaction (Morrison et al., 2009). The present study used the Romantic Relationship subscale of the Problem Questionnaire (Seiffge-Krenke, 1995), which focused more on general impressions of an individual's romantic relationship, whereas Morrison et al. (2009) used the Boyfriend/Girlfriend/Spouse subscale of the Negative Life Events Questionnaire (Saxe, 1987), which assessed the frequency of stressful events in the course of a romantic relationship. The two subscales measure



different aspects of the romantic stress construct. Measurement of the frequency of stressful events in a romantic relationship may provide an alternate measure of relationship stress and satisfaction in contrast to the general impressions of one's romantic relationship at a specific time point. Future investigations could provide a better conceptualization of romantic stress through the use of both subscales.

### **Limitations of the Present Study**

One major limitation of the present study involves its cross-sectional nature, which has been mentioned previously. Trait measures were used in the present study, and although it is legitimate to expect that enduring traits will produce consistent patterns of interaction, a cross-sectional design creates a static depiction of variable interrelationships at that specific time point. Future research can expand the results of the present study through measurements at multiple time points in order to gain a better understanding of how the relationship between avoidant coping style, self-evaluative salience, romantic stress, and areas of ED pathology change over time. As individual traits, both self-evaluative salience and avoidant coping style should remain consistent over time, in contrast to fluctuations in perceived romantic stress. ED attitude endorsement should vary over time for low self-evaluative salience individuals, in tandem with changes in perceived romantic stress over time. Based on the results of the present study, ED attitude endorsement should increase when perceived romantic stress increases for low self-evaluative salience individuals. ED symptom endorsement should also follow the pattern of results established in this study, increasing or decreasing in relation to romantic stress, dependent on the relatively static level of avoidant coping style and self-evaluative salience endorsement of the individual. The inclusion of greater detail in data collection can strengthen the conclusions of future investigations. One possibility is the use of a

daily 'diary' format, wherein participants provide daily updates on behaviour related to EDs. The addition of alternative measures, such as a daily 'diary' format to track ED symptoms (e.g. Sherry & Hall, 2009), may provide stronger support for the results of the study. The use of a daily diary design would provide less recall bias, as individuals tend to underestimate the frequency of disordered eating when using longer term retrospective recall (Bardone, Krahn, Goodman, & Searles, 2000), which was the method used in this study. The use of a daily diary format could provide a greater level of detail regarding the variables under study, and also a more thorough understanding of the variable interrelations.

A second major limitation in this study was the composition of the study sample. The majority of the sample consisted of Caucasian undergraduate students majoring in psychology, who were in their third or fourth year of study. The experiences, values, and perspectives of this sample based on their age, culture, ethnic heritage, and education would affect their responses in this study. This specific sample demographic limits the generalizability of the findings, and may have contributed to the null findings when investigating the relationship between avoidant coping style and the outcome variables of ED attitudes, ED symptoms, and body dissatisfaction. Although the thin ideal has been most widely propagated in modern Western society, global access to mass media has expanded its effects on non-Western cultures (Hesse-Biber, Leavy, Quinn, & Zoino, 2006). The variable interrelationships may change based on cultural and societal values that would differ between Caucasian students and those with other ethnic heritages. Also, participant attitudes towards romantic relationships and eating disorders may change with age and education, both of which were relatively limited in this sample. Older women may have different standards for romantic stress and what would constitute a strong

stressor in comparison to younger women. In addition, women who have been less exposed to and educated in the field of psychology may perceive these factors differently. These individuals may not have background knowledge provided by psychology courses, and may hold preconceived notions of psychological factors which could be modified through education. It is crucial for future investigations to compare the results of the present study to samples taken from a more diverse community population, in order to increase the generalizability of the results.

One way to address this limitation is by comparing a typical undergraduate sample to a clinical sample. Investigating the differences in the predicting factors of ED for individuals who have been diagnosed with eating disorders may provide interesting insight on the evolution of these factors from a different perspective, and insight as to how clinical endorsement of the outcome variables would affect the predictor variables. This would address the sample composition limitation, and the comparison of a clinical and non-clinical sample would also allow for greater application and generalizability of the results, especially in terms of treatment and prevention. Such a study would also provide preliminary investigations of the predictor variables in two crucial and relevant populations: ED diagnosed women and undergraduate women, the latter being a group vulnerable to ED behaviour (Mintz et al., 1997). This direction in future research would provide insight on how these variables change as ED pathology passes the clinical threshold. The present study provides insight on the interaction between the predictor variables in a non-clinical sample of typical undergraduate women. Future investigators may wish to study how these relationships will change or stay the same as the outcome variables of ED pathology increase. It is important to know how these ED predictors behave in typical and clinical populations, and thus begin to formulate how changes in

ED attitudes and symptoms may be correlated to changes in the factors of romantic stress, avoidant coping, and self-evaluative salience.

Third, this study involves the conceptualization of coping style as a predominant reaction to stress specific to each individual. A recent study by Fitzsimmons and Bardone-Cone (2011) hypothesized that the use of a maladaptive coping strategy in combination with other forms of more adaptive coping may be more adaptive than the use of the singular adaptive coping style alone. In some situations, it may be more helpful for an individual to initially avoid a threatening stressor, and then eventually engage the problem directly through task-oriented coping. Although both avoidant coping strategies and task-oriented coping strategies are employed in a single situation, the overall coping would be considered contextually adaptive. However, the use of multiple coping style strategies in the context of coping with a single stressor was not accounted for by the present study. Differences over time or environmental factors are not accounted for when coping is measured as a trait variable (e.g., Coping Inventory for Stressful Situations), or through recording coping strategies used in specific stressful situations (Coyne & Racioppo, 2000). The alternative of using laboratory manipulations to measure real-time coping behaviour would also affect the generalizability of results to real-life situations (Coyne & Racioppo, 2000). Future investigations should investigate coping strategy usage in greater detail, and the impact of different combinations of coping styles on perceived stress levels. Comparing this measurement of coping with a more static and trait-like conceptualization would allow for a more thorough understanding of the coping construct.

Fourth, the variable of ED symptoms was constrained to the concept of dietary restraint in this study. This was due to overlap in the Eating Disorder Examination

Questionnaire items with the ED attitude variable, which was measured in this study with the Eating Disorder Inventory-2. Although a subscale composed of the specific behavioural items in the Eating Disorder Examination Questionnaire was considered for inclusion, the subscale was discarded as it did not meet statistical assumptions for multiple regression analyses. By necessity, this left the Restraint subscale of the Eating Disorder Examination Questionnaire as the sole assessor of ED symptoms in this study, as other items in that measure were measures of ED attitudes as opposed to ED symptom behaviour. Future investigations of ED symptoms as a distinct variable should utilize measures with a clear behavioural focus, and clearly distinguish between assessment of ED attitudes and ED symptoms. There are no widely known measures of ED symptoms, as the most popular ED questionnaires measure both the attitudinal and symptomatic components of ED to provide a more thorough assessment (e.g., Eating Disorder Inventory-2, Eating Disorder Examination Questionnaire, Eating Attitudes Test). The specific behavioural items in the Eating Disorder Examination Questionnaire provide an adequate overview of six behaviours in ED diagnostic criteria, but further validation and reliability testing of that composite subscale would be necessary, as well as norming scale scores across different samples. Also, such a subscale may not be usable in a non-clinical population such as this study, due to low endorsement rates in the sample. However, such a scale would provide greater depth to the measurement of ED in a specific sample, through understanding the frequency and preference of specific ED behaviours. It would also allow for more diverse and detailed analyses of ED symptoms, and eventually the exploration of factors which cause a differential rate of endorsement of the different ED symptom behaviours.

## **Implications and Suggestions for Future Research**

The findings of the present study have several implications for theory, treatment, and future research. The three-way interaction in this study provides preliminary support for a relationship between self-evaluative salience and romantic stress, based on an attribution of romantic stress to appearance. The results suggest that expression of this relationship through ED symptoms is dependent on the level of avoidant coping style endorsement, and thus the individual's response to the romantic stressors. Furthermore, the results support the importance of self-evaluative salience as a key construct in the constellation of factors which potentiate or precipitate ED symptomatology. The present study contributes to the growing research base for the relatively new construct of self-evaluative salience. Subsequent research should attempt to replicate this relationship, and further investigate the role of self-evaluative salience in presenting ED pathology.

Avoidant coping style positively predicted ED attitudes in this study, in line with multiple past studies (e.g. Koff & Sagani, 1997; Villa et al., 2009; Weller & Dziegielewski, 2004). However, there is a lack of clarity in past research regarding the role of coping in eating disorders. Inconsistencies in conceptualizing and precisely defining coping styles make it difficult to compare differing studies, or create cohesive interpretation of results across multiple studies that use different instruments (Bittinger & Smith, 2003). For example, when aspects of emotion-oriented coping were used in conceptualizing avoidant coping, avoidant coping was found to be associated with EDs (Garcia-Grau et al., 2002). Studies of coping style and ED behaviour are limited by differences in the various coping questionnaires used. Coping style is generally conceptualized on the approach/avoidance dichotomy, with the differentiation between task-oriented and emotion-oriented coping, and the differentiation between distraction

avoidance and social avoidance noted in some instances (Carver & Connor-Smith, 2010). The present study used the Coping Inventory for Stressful Situations as a standardized and conceptually solid measure of coping styles (Endler & Parker, 1990b). The Coping Inventory for Stressful Situations clearly differentiates between emotion-oriented coping and avoidant coping (Endler & Parker, 1990b). Future research should investigate the comparison of multiple coping measures in a single diverse sample, which would provide a clear point of comparison for the many coping style constructs and conceptualizations in this field of research.

The present study has implications for treatment and prevention of ED in the area of coping. Results from this study support ED pathology as a form of avoidant coping for individuals who report elevations in self-evaluative salience and low perceived romantic stress. Individuals diagnosed with ED tend to interpret situations as more stressful than do control participants (Engler et al., 2006), and may engage in maladaptive means of coping due to the elevated perception of the stressfulness of a situation. Researchers have found that training individuals to preferentially utilize more adaptive means of coping preceded reductions in maladaptive coping style as well as ED symptomatology (Yager et al., 1995). As such, aiding an individual to re-interpret a stressful situation through training them to utilize more adaptive means of coping may help them to engage in more adaptive behaviour (Bittinger & Smith, 2003).

In addition, the present study has supported the potentiation of ED attitudes when low self-evaluative salience individuals perceive elevated romantic stress. Romantic stress also factored into the elevation of ED symptomatology for low self-evaluative salience individuals who may use it as a means of avoidance, and for high self-evaluative salience individuals who attribute romantic stress to their appearance and seek to deal

with the stress through appearance management. As such, it may be helpful to consider psycho-education of vulnerable individuals on the importance of appearance in romantic relationships, and the dangers of overemphasizing appearance in a romantic context. Counselling on methods of effective romantic stress resolution and means of coping with romantic stress may also be effective for those individuals, and redirect them from focusing on ED attitudes and symptomatology as a means of managing or coping with perceived romantic stress.

In addition, this study raised questions regarding how ED is measured or assessed in future investigations in the context of the continuity/discontinuity debate. This study provides support for the discontinuity of ED symptoms when coping style is considered. Measurement of discontinuous ED aspects should strive to differentiate between ED and non-ED as separate phenomena, as opposed to assessing the severity of a variable on a spectrum, which would be the approach taken if assessing continuous ED aspects. Conceptualization of aspects of ED as either continuous or discontinuous will also affect assessment and treatment. On the basis of coping style, the results of this study support ED in the context of the study variables as a discontinuous phenomenon. This implies group membership will change the expressed symptomatology, and thus the efficacy of different types of treatment. Clinicians may select different treatment approaches based on the patient's clinical presentation and their specific symptom indicators, as treatments tend to be specialized based on the type and degree of symptom presentation. As such, the knowledge of that patient's group membership in a discontinuous conceptualization of crucial ED aspects would affect treatment choice. In that context, interventions may be selected predominantly on the basis of the individual's group membership rather than on the basis of reaching commonly acknowledged critical levels on continuum of severity for



multiple factors. Future investigations should look to identify the continuity/discontinuity of specific symptoms of ED, in order to aid in risk assessment and treatment. This is because individuals who do not have a specific discontinuous indicator are at lower risk of developing ED, regardless of the level of other continuous indicators. Thus, assessing the continuous or discontinuous nature of significant ED indicators in future investigations would increase the efficacy of ED risk assessment and treatment selection.

### **Conclusions**

Past research has not specifically addressed the combination of self-evaluative salience, avoidant coping style, and romantic stress, and their combined impact on ED pathology. This study aimed to provide preliminary support for ED behaviour as a form of avoidant coping with romantic stress for individuals high in self-evaluative salience, through the investigation of a three-way interaction between the latter three variables. Contrary to predictions, elevations in self-evaluative salience, romantic stress, and avoidant coping did not result in the highest levels of ED attitudes, ED symptoms, and body dissatisfaction. Also contrary to predictions, this non-clinical sample did not engage in ED symptomatology as a means of avoidance coping. Further, a combination of high perceived romantic stress and elevated self-evaluative salience was a predictive factor of ED attitudes. These results provide evidence for the influence of romantic stress on ED attitudes, particularly in low self-evaluative salience individuals. Also, these results support a strong attribution of romantic stress to appearance for individuals high in self-evaluative salience, such that avoidant individuals will reduce their ED behaviour when avoiding romantic stress, and less avoidant individuals will increase their ED behaviour when handling romantic stress. This study also supported the discontinuity model of ED, with individuals who endorse increasingly disordered attitudes about eating not

displaying the same increase in ED symptoms, which could not be fully explained by increasing self-evaluative salience. Future studies should continue to explore these factors across a longer period of time, through more diverse samples or a clinical population, and by including additional factors that may provide greater clarity to the impact of these factors on the development and maintenance of eating disorders.

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## APPENDICES

## APPENDIX A

## PARTICIPANT POOL ADVERTISEMENT

Title: "Stress and Coping in Everyday Life"

Researchers: Joyce Yu, Dr. Josee Jarry

Duration: 60 minutes

Credits: 1 credit

Description:

The goal of this study is to investigate the association between changes in stress and how you cope with it in your everyday life. If you volunteer to participate in this study, you will be asked to complete an online survey. It is very important that you complete this survey in a quiet area, by yourself. Ensure that you are in a relaxed mood and can fully concentrate before beginning the study. Your true thoughts and feelings are invaluable to us, and we want to make sure all your responses in this survey reflect how you really feel.

This study is available only to University of Windsor students registered in the Psychology Participant Pool, and only these students will receive bonus credits in exchange for their participation. This study will take no more than 60 minutes of your time, and is worth 1 bonus point if you are registered in the pool and you are registered in one or more eligible psychology courses.



## APPENDIX B

## DEMOGRAPHICS QUESTIONNAIRE

Age: \_\_\_\_\_

Sex: \_\_\_\_\_

**Marital status:**Married/common law     Dating     Engaged Number of children: 0     1     2     3     4     more than 4 **What is your ethnic background?**Caucasian South Asian Hispanic African-Canadian European Native-Canadian East Asian Other (please specify):  
\_\_\_\_\_**School enrolment:** Full time student Part time student **Years in University:**First year Third year More than 4 years Second year Fourth year 

Including your current psychology course, how many psychology courses have you taken so far? \_\_\_\_\_

What is/are your major(s)? \_\_\_\_\_

What is/are your minor(s)? \_\_\_\_\_

**If currently employed, your occupation is:**Full time Clerical Labourer Part time Professional Self-employed Owner/manager Unemployed 

Other: \_\_\_\_\_

**Mother or guardian's occupation:**Full time Clerical Labourer Part time Professional Self-employed Owner/manager Unemployed 

Other: \_\_\_\_\_

**Father or guardian's occupation:**

Full time  Clerical  Labourer   
Part time  Professional  Self-employed   
Owner/manager  Unemployed

Other: \_\_\_\_\_

## APPENDIX C

## BODY-IMAGE IDEALS QUESTIONNAIRE

Each item on this questionnaire deals with a different physical characteristic. For each characteristic, think about how you would describe yourself as you actually are. Then think about how you wish you were. The difference between the two reveals how close you come to your personal ideal. In some instances, your looks may closely match your ideal. In other instances, they may differ considerably. On **Part A** of each item, rate **how much** you resemble your personal physical ideal by circling a number from 0 to 3.

Your physical ideals may differ in their importance to you, regardless of how close you come to them. You may feel strongly that some ideals embody the way you want to look or to be. In other areas, your ideals may be less important to you. On **Part B** of each item, rate how important your ideal is to you by circling a number on the 0 to 3 scale.

1. A. My ideal height is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal height?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

2. A. My ideal skin complexion is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal skin complexion?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

40. A. My ideal hair texture and thickness are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal hair texture and thickness?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

40. A. My ideal facial features (eyes, nose, ears, facial shape) are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal facial features?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

5. A. My ideal muscle tone and definition is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal muscle tone and definition?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

6. A. My ideal body proportions are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal body proportions?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

7. A. My ideal weight is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal weight?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

8. A. My ideal chest size is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal chest size?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

9. A. My ideal physical strength is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical strength?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

10. A. My ideal physical coordination is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical coordination?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

11. A. My ideal overall physical appearance is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your overall physical appearance?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

## APPENDIX D

## EATING DISORDER INVENTORY – 2

The items below ask about your attitudes, feelings, and behaviour. Some of the items relate to food or eating. Other items ask about your feelings about yourself. For each item, decide if the item is true about you ALWAYS (A), USUALLY (U), OFTEN (O), SOMETIMES (S), RARELY I, or NEVER (N). Circle the letter that corresponds to your rating. For example, if your rating for an item is OFTEN, you would circle the O for that item.

Respond to all of the items, making sure that you circle the letter for the rating that is true about you. DO NOT ERASE! If you need to change an answer, make an “X” through the incorrect letter and then circle the correct one.

		Always (A)	Usually (U)	Often (O)	Sometimes (S)	Rarely I	Never (N)
1	I eat sweets and carbohydrates without feeling nervous.	A	U	O	S	R	N
2	I think that my stomach is too big.	A	U	O	S	R	N
3	I wish that I could return to the security of childhood.	A	U	O	S	R	N
4	I eat when I am upset.	A	U	O	S	R	N
5	I stuff myself with food.	A	U	O	S	R	N
6	I wish that I could be younger.	A	U	O	S	R	N
7	I think about dieting.	A	U	O	S	R	N
8	I get frightened when my feelings are too strong.	A	U	O	S	R	N
9	I think that my thighs are too large.	A	U	O	S	R	N
10	I feel ineffective as a person.	A	U	O	S	R	N
11	I feel extremely guilty after overeating.	A	U	O	S	R	N
12	I think that my stomach is just the right size.	A	U	O	S	R	N
13	Only outstanding performance is good enough in my family.	A	U	O	S	R	N
14	The happiest time in life is when you are a child.	A	U	O	S	R	N
15	I am open about my feelings.	A	U	O	S	R	N
16	I am terrified of gaining weight.	A	U	O	S	R	N
17	I trust others.	A	U	O	S	R	N

18	I feel alone in the world.	A	U	O	S	R	N
19	I feel satisfied with the shape of my body.	A	U	O	S	R	N
20	I feel generally in control of things in my life.	A	U	O	S	R	N
21	I get confused about what emotion I am feeling.	A	U	O	S	R	N
22	I would rather be an adult than a child.	A	U	O	S	R	N
23	I can communicate with others easily.	A	U	O	S	R	N
24	I wish I were someone else.	A	U	O	S	R	N
25	I exaggerate or magnify the importance of weight.	A	U	O	S	R	N
26	I can clearly identify what emotion I am feeling.	A	U	O	S	R	N
27	I feel inadequate.	A	U	O	S	R	N
28	I have gone on eating binges where I felt that I could not stop.	A	U	O	S	R	N
29	As a child, I tried very hard to avoid disappointing my parents and teachers.	A	U	O	S	R	N
30	I have close relationships.	A	U	O	S	R	N
31	I like the shape of my buttocks.	A	U	O	S	R	N
32	I am preoccupied with the desire to be thinner.	A	U	O	S	R	N
33	I don't know what's going on inside me.	A	U	O	S	R	N
34	I have trouble expressing my emotions to others.	A	U	O	S	R	N
35	The demands of adulthood are too great.	A	U	O	S	R	N
36	I hate being less than best at things.	A	U	O	S	R	N
37	I feel secure about myself.	A	U	O	S	R	N
38	I think about bingeing (overeating).	A	U	O	S	R	N
39	I feel happy that I am not a child anymore.	A	U	O	S	R	N
40	I get confused as to whether or not I am hungry.	A	U	O	S	R	N
41	I have a low opinion of myself.	A	U	O	S	R	N
42	I feel that I can achieve my standards.	A	U	O	S	R	N
43	My parents have expected excellence of me.	A	U	O	S	R	N
44	I worry that my feelings will get out of control.	A	U	O	S	R	N
45	I think that my hips are too big.	A	U	O	S	R	N
46	I eat moderately in front of others and stuff myself when they're gone.	A	U	O	S	R	N
47	I feel bloated after eating a normal meal.	A	U	O	S	R	N
48	I feel that people are happiest when they are children.	A	U	O	S	R	N
49	If I gain a pound, I worry that I will keep gaining.	A	U	O	S	R	N
50	I feel that I am a worthwhile person.	A	U	O	S	R	N
51	When I am upset, I don't know if I am sad, frightened, or angry.	A	U	O	S	R	N
52	I feel that I must do things perfectly, or not do them at all.	A	U	O	S	R	N



53	I have the thought of trying to vomit in order to lose weight.	A	U	O	S	R	N
54	I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close)	A	U	O	S	R	N
55	I think that my thighs are just the right size.	A	U	O	S	R	N
56	I feel empty inside (emotionally).	A	U	O	S	R	N
57	I can talk about personal thoughts or feelings.	A	U	O	S	R	N
58	The best years of your life are when you become an adult.	A	U	O	S	R	N
59	I think my buttocks are too large.	A	U	O	S	R	N
60	I have feelings I can't quite identify.	A	U	O	S	R	N
61	I eat or drink in secrecy.	A	U	O	S	R	N
62	I think that my hips are just the right size.	A	U	O	S	R	N
63	I have extremely high goals.	A	U	O	S	R	N
64	When I am upset, I worry that I will start eating.	A	U	O	S	R	N
65	People I really like end up disappointing me.	A	U	O	S	R	N
66	I am ashamed of my human weaknesses.	A	U	O	S	R	N
67	Other people would say that I am emotionally unstable.	A	U	O	S	R	N
68	I would like to be in total control of my bodily urges.	A	U	O	S	R	N
69	I feel relaxed in most group situations.	A	U	O	S	R	N
70	I say things impulsively that I regret having said.	A	U	O	S	R	N
71	I go out of my way to experience pleasure.	A	U	O	S	R	N
72	I have to be careful of my tendency to abuse drugs.	A	U	O	S	R	N
73	I am outgoing with most people.	A	U	O	S	R	N
74	I feel trapped in relationships.	A	U	O	S	R	N
75	Self-denial makes me feel stronger spiritually.	A	U	O	S	R	N
76	People understand my real problems.	A	U	O	S	R	N
77	I can't get strange thoughts out of my head.	A	U	O	S	R	N
78	Eating for pleasure is a sign of moral weakness.	A	U	O	S	R	N
79	I am prone to outbursts of anger or rage.	A	U	O	S	R	N
80	I feel that people give me the credit I deserve.	A	U	O	S	R	N
81	I have to be careful of my tendency to abuse alcohol.	A	U	O	S	R	N
82	I believe that relaxing is simply a waste of time.	A	U	O	S	R	N
83	Others would say that I get irritated easily.	A	U	O	S	R	N
84	I feel like I am losing out everywhere.	A	U	O	S	R	N
85	I experience marked mood shifts.	A	U	O	S	R	N
86	I am embarrassed by my bodily urges.	A	U	O	S	R	N
87	I would rather spend time by myself than with	A	U	O	S	R	N

	others.						
88	Suffering makes you a better person.	A	U	O	S	R	N
89	I know that people love me.	A	U	O	S	R	N
90	I feel like I must hurt myself or others.	A	U	O	S	R	N
91	I feel like I really know who I am.	A	U	O	S	R	N

## APPENDIX E

## EATING DISORDERS EXAMINATION QUESTIONNAIRE

The following questions are concerned with the PAST FOUR WEEKS ONLY (28 days). Please read each question carefully and circle the appropriate number on the right. Please answer all the questions.

	ON HOW MANY OUT OF THE PAST 28 DAYS . . .	No Days	1-5 Days	6-12 Days	13-15 Days	16-22 Days	23-27 Days	Every Day
1.	Have you been deliberately <u>trying</u> to limit the amount of food you eat to influence your shape or weight?	0	1	2	3	4	5	6
2.	Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?	0	1	2	3	4	5	6
3.	Have you <u>tried</u> to avoid eating any foods which you like in order to influence your shape or weight?	0	1	2	3	4	5	6
4.	Have you <u>tried</u> to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or when you should eat?	0	1	2	3	4	5	6
5.	Have you ever wanted your stomach to be empty?	0	1	2	3	4	5	6
6.	Has thinking about <i>food or its calorie</i> content made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6
7.	Have you been afraid of losing control over eating?	0	1	2	3	4	5	6
8.	Have you had an episode of binge eating?	0	1	2	3	4	5	6
9.	Have you eaten in secret? (Do not count binges).	0	1	2	3	4	5	6
10.	Have you definitely wanted your stomach to be flat?	0	1	2	3	4	5	6
11.	Has thinking about <i>shape or weight</i> made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6

	ON HOW MANY OUT OF THE PAST 28 DAYS . . .	No Days	1-5 Days	6-12 Days	13-15 Days	16-22 Days	23- 27 Days	Every Day
12.	Have you had a definite fear that you might gain weight or become fat?	0	1	2	3	4	5	6
13.	Have you felt fat?	0	1	2	3	4	5	6
14.	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

15. On what proportion of times that you have eaten have you felt guilty because of the effect on your shape or weight? (Do not count binges). Circle the number which applies:

None of the times	A few of the times	Less than half of the times	Half the times	More than half the times	Most of the time	Every time
0	1	2	3	4	5	6

16. Over the past four weeks (28 days), have there been any times when you have felt that you have eaten what other people would regard as an unusually large amount of food given the circumstances?

No	Yes
0	1

17. How many such episodes have you had over the past four weeks? \_\_\_\_\_

18. During how many of these episodes of overeating did you have a sense of having lost control over your eating? \_\_\_\_\_

19. Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have not eaten an unusually large amount of food given the circumstances?

<b>No</b>	<b>Yes</b>
0	1

20. How many such episodes have you had over the past four weeks? \_\_\_\_\_

21. Over the past four weeks have you made yourself sick (vomit) as a means of controlling your shape or weight?

<b>No</b>	<b>Yes</b>
0	1

22. How many times have you done this over the past four weeks? \_\_\_\_\_

23. Have you taken laxatives as a means of controlling your shape or weight?

<b>No</b>	<b>Yes</b>
0	1

24. How many times have you done this over the past four weeks? \_\_\_\_\_

25. Have you taken diuretics (water tablets) as a means of controlling your shape or weight?

<b>No</b>	<b>Yes</b>
0	1

26. How many times have you done this over the past four weeks? \_\_\_\_\_

27. Have you exercised hard as a means of controlling your shape or weight?

<b>No</b>	<b>Yes</b>
0	1

28. How many times have you done this over the past four weeks? \_\_\_\_\_

OVER THE PAST FOUR WEEKS (28 DAYS) Please circle the number which best describes your behaviour.		Not at all		Slightly		Moderately		Markedly
29.	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
30.	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
31.	How much would it upset you if you had to weigh yourself once a week for the next four weeks?	0	1	2	3	4	5	6
32.	How dissatisfied have you felt about your weight?	0	1	2	3	4	5	6
33.	How dissatisfied have you felt about your shape?	0	1	2	3	4	5	6
34.	How concerned have you been about other people seeing you eat?	0	1	2	3	4	5	6
35.	How uncomfortable have you felt seeing your body; for example, in the mirror, in shop window reflections, while undressing or taking a bath or a shower?	0	1	2	3	4	5	6
36.	How uncomfortable have you felt about others seeing your body; for example, in communal changing rooms, when swimming or wearing tight clothes?	0	1	2	3	4	5	6

## APPENDIX F

## COPING INVENTORY FOR STRESSFUL SITUATIONS

**Instructions:** The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item. Indicate how much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation.

		Not at all		Very much		
1.	Schedule my time better	1	2	3	4	5
2.	Focus on the problem and see how I can solve it	1	2	3	4	5
3.	Think about the good times I've had	1	2	3	4	5
4.	Try to be with other people	1	2	3	4	5
5.	Blame myself for procrastinating	1	2	3	4	5
6.	Do what I think best	1	2	3	4	5
7.	Preoccupied with aches and pains	1	2	3	4	5
8.	Blame myself for having gotten into this situation	1	2	3	4	5
9.	Window shop	1	2	3	4	5
10.	Outline my priorities	1	2	3	4	5
11.	Try to go to sleep	1	2	3	4	5
12.	Treat myself to a favorite food or snack	1	2	3	4	5
13.	Feel anxious about not being able to cope	1	2	3	4	5
14.	Become very tense	1	2	3	4	5
15.	Think about how I have solved similar problems	1	2	3	4	5
16.	Tell myself that it is really not happening to me	1	2	3	4	5
17.	Blame myself for being too emotional about the situation	1	2	3	4	5
18.	Go out for a snack or meal	1	2	3	4	5
19.	Become very upset	1	2	3	4	5
20.	Buy myself something	1	2	3	4	5
21.	Determine a course of action and follow it	1	2	3	4	5
22.	Blame myself for not knowing what to do	1	2	3	4	5
23.	Go to a party	1	2	3	4	5
24.	Work to understand the situation	1	2	3	4	5
25.	"Freeze" and don't know what to do	1	2	3	4	5
26.	Take corrective action immediately	1	2	3	4	5
27.	Think about the event and learn from my mistakes	1	2	3	4	5
28.	Wish that I could change what had happened or how I felt	1	2	3	4	5
29.	Visit a friend	1	2	3	4	5
30.	Worry about what I am going to do	1	2	3	4	5
31.	Spend time with a special person	1	2	3	4	5
32.	Go for a walk	1	2	3	4	5
33.	Tell myself that it will never happen again	1	2	3	4	5

34.	Focus on my general inadequacies	1	2	3	4	5
35.	Talk to someone whose advice I value	1	2	3	4	5
36.	Analyze the problem before reacting	1	2	3	4	5
37.	Phone a friend	1	2	3	4	5
38.	Get angry	1	2	3	4	5
39.	Adjust my priorities	1	2	3	4	5
40.	See a movie	1	2	3	4	5
41.	Get control of the situation	1	2	3	4	5
42.	Make an extra effort to get things done	1	2	3	4	5
43.	Come up with several different solutions to the problem	1	2	3	4	5
44.	Take time off and get away from the situation	1	2	3	4	5
45.	Take it out on other people	1	2	3	4	5
46.	Use the situation to prove that I can do it	1	2	3	4	5
47.	Try to be organized so I can be on top of the situation	1	2	3	4	5
48.	Watch TV	1	2	3	4	5



## APPENDIX G

## PROBLEM QUESTIONNAIRE

On the following pages you will find a list of worries and difficulties that adolescents of your age have identified as their problems. Probably, some are more, others are less stressful for you.

Please indicate honestly and spontaneously how stressful these problems are for you.

I found this problem to be...		Highly stressful	Very stressful	Moderately stressful	Minimally stressful	Not stressful at all
1	There is great pressure to get the best marks in school.	5	4	3	2	1
2	There is no comradeship in my courses, only competition.	5	4	3	2	1
3	Interactions with other students and teachers are mostly impersonal.	5	4	3	2	1
4	I can't do anything with the school's prescribed learning material.	5	4	3	2	1
5	The teachers aren't interested in my problems.	5	4	3	2	1
6	Differences in opinions with my teacher could result in bad marks.	5	4	3	2	1
7	Learning material is too difficult for me.	5	4	3	2	1
8	<del>I might not get into the training program or college/university of my choice.</del>	5	4	3	2	1
9	The increasing destruction of the environment aggrieves me.	5	4	3	2	1
10	It may be difficult to combine my studies and job with marriage and family.	5	4	3	2	1
11	I might lose myself in the daily humdrum of life, in social norms and pressures.	5	4	3	2	1
12	I would like very much to discover my real interests.	5	4	3	2	1
13	I don't know what I am going to do after finishing school.	5	4	3	2	1
14	I am unsure which profession I am best suited for.	5	4	3	2	1
15	I might become unemployed.	5	4	3	2	1
16	My parents show little understanding for my problems in school.	5	4	3	2	1
17	My parents are only interested that I get good marks in school.	5	4	3	2	1
18	I fight with my parents because my opinions about many things	5	4	3	2	1

	differ from theirs.					
19	I wish my parents let me make my own decisions.	5	4	3	2	1
20	I can't talk with my parents.	5	4	3	2	1
21	My parents don't approve of my friends.	5	4	3	2	1
22	My parents don't have much time for me.	5	4	3	2	1
23	It's difficult for me to pursue my own interests because I don't want to disappoint my parents.	5	4	3	2	1
24	I wish I wasn't so dependent on my parents.	5	4	3	2	1
25	I hardly have any friends.	5	4	3	2	1
26	It's difficult for me to approach others.	5	4	3	2	1
27	I'm having difficulties combining my interests with those of my friends.	5	4	3	2	1
28	I don't have a real friend with whom I can talk about personal worries and problems.	5	4	3	2	1
29	Some of my peers are only willing to have superficial contact with me.	5	4	3	2	1
30	I am unsure if others will accept me.	5	4	3	2	1
31	I don't like the fact that outsiders can't join existing cliques.	5	4	3	2	1
32	My peers are often very stubborn and intolerant towards each other.	5	4	3	2	1
33	I have too little time for my friends.	5	4	3	2	1
34	I am often unable to get started on something.	5	4	3	2	1
35	I don't have enough money for my leisure time activities	5	4	3	2	1
36	School and home obligations don't leave me enough free time.	5	4	3	2	1
37	In my free time I spend too much time with watching TV, surfing in the Internet or playing PC-games.	5	4	3	2	1
38	I often hang around in the streets because there are not enough leisure facilities for adolescents of my age.	5	4	3	2	1
39	My parents try to influence how I spend my leisure time.	5	4	3	2	1
40	I don't have anyone with whom I can spend my free time.	5	4	3	2	1
41	I don't like the pressure of so many leisure facilities I can hardly ever use.	5	4	3	2	1
42	<del>I don't have a boyfriend/girlfriend.</del>	5	4	3	2	1
43	I feel insecure in dealing with the opposite sex.	5	4	3	2	1
44	I am afraid of losing contact with my other friends if I pair up with a boyfriend/girlfriend.	5	4	3	2	1
45	I sometimes have to make pretences just to please my boyfriend/girlfriend.	5	4	3	2	1
46	I am afraid of hurting my boyfriend/girlfriend because I am	5	4	3	2	1

	unsure of his/her feelings					
47	It's difficult for me to develop a truly equal and balanced romantic relationship.	5	4	3	2	1
48	My sexual wishes and expectations do not match with those of my boyfriend/girlfriend.	5	4	3	2	1
49	I am afraid that my jealousy could ruin my romantic relationships.	5	4	3	2	1
50	I feel lonely.	5	4	3	2	1
51	Even little things enrage me.	5	4	3	2	1
52	I am dissatisfied with my appearance.	5	4	3	2	1
53	I am often sad or dejected.	5	4	3	2	1
54	I find it difficult to talk about my feelings with others.	5	4	3	2	1
55	I am different than my friends.	5	4	3	2	1
56	I am dissatisfied with my behavior, my own traits and abilities.	5	4	3	2	1
57	I don't trust myself to say anything in the presence of others.	5	4	3	2	1
58	I have guilty feelings about a few things I have done.	5	4	3	2	1
59	I would like to discover what I really want.	5	4	3	2	1
60	I find it difficult to live up to my own decisions.	5	4	3	2	1
61	All new things make me afraid.	5	4	3	2	1

## APPENDIX H

## APPEARANCE SCHEMAS INVENTORY – REVISED

The statements below are beliefs that people may or may not have about their physical appearance and its influence on life. Decide on the extent to which you personally **disagree or agree** with each statement and enter a number from 1 to 5 in the space on the left. There are no right or wrong answers. Just be truthful about your personal beliefs.

1	2	3	4	5
Strongly Disagree	Mostly Disagree	Neither Agree or Disagree	Mostly Agree	Strongly Agree

- \_\_\_\_\_ 1. I spend little time on my physical appearance.
- \_\_\_\_\_ 2. When I see good-looking people, I wonder about how my own looks measure up.
- \_\_\_\_\_ 3. I try to be as physically attractive as I can be.
- \_\_\_\_\_ 4. I have never paid much attention to what I look like.
- \_\_\_\_\_ 5. I seldom compare my appearance to that of other people I see.
- \_\_\_\_\_ 6. I often check my appearance in a mirror just to make sure I look okay.
- \_\_\_\_\_ 7. When something makes me feel good or bad about my looks, I tend to dwell on it.
- \_\_\_\_\_ 8. If I like how I look on a given day, it's easy to feel happy about other things.
- \_\_\_\_\_ 9. If somebody had a negative reaction to what I look like, it wouldn't bother me.
- \_\_\_\_\_ 10. When it comes to my physical appearance, I have high standards.
- \_\_\_\_\_ 11. My physical appearance has had little influence on my life.
- \_\_\_\_\_ 12. Dressing well is not a priority for me.

1	2	3	4	5
Strongly Disagree	Mostly Disagree	Neither Agree or Disagree	Mostly Agree	Strongly Agree

- \_\_\_\_\_ 13. When I meet people for the first time, I wonder what they think about how I look.
- \_\_\_\_\_ 14. In my everyday life, lots of things happen that make me think about what I look like.
- \_\_\_\_\_ 15. If I dislike how I look on a given day, it's hard to feel happy about other things.
- \_\_\_\_\_ 16. I fantasize about what it would be like to be better looking than I am.
- \_\_\_\_\_ 17. Before going out, I make sure that I look as good as I possibly can.
- \_\_\_\_\_ 18. What I look like is an important part of who I am.
- \_\_\_\_\_ 19. By controlling my appearance, I can control many of the social and emotional events in my life.
- \_\_\_\_\_ 20. My appearance is responsible for much of what's happened to me in my life.

APPENDIX I  
ROSENBERG SELF-ESTEEM SCALE

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**

- |  |           |
|--|-----------|
| 1. On the whole, I am satisfied with myself.                                     | SA A D SD |
| 2. At times, I think I am no good at all.  | SA A D SD |
| 3. I feel that I have a number of good qualities.                                | SA A D SD |
| 4. I am able to do things as well as most other people.                          | SA A D SD |
| 5. I feel I do not have much to be proud of.                                     | SA A D SD |
| 6. I certainly feel useless at times.  | SA A D SD |
| 7. I feel that I'm a person of worth, at least on an equal plane with<br>others. | SA A D SD |
| 8. I wish I could have more respect for myself.                                  | SA A D SD |
| 9. All in all, I am inclined to feel that I am a failure.                        | SA A D SD |
| 10. I take a positive attitude toward myself.                                    | SA A D SD |

## APPENDIX J

## BECK DEPRESSION INVENTORY – 2

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past week, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

<p><b>1. Sadness</b></p> <p>0 I do not feel sad.</p> <p>1 I feel sad much of the time.</p> <p>2 I am sad all the time.</p> <p>3 I am so sad or unhappy that I can't stand it.</p> <p><b>2. Pessimism</b></p> <p>0 I am not discouraged about my future.</p> <p>1 I feel more discouraged about my future than I used to be.</p> <p>2 I do not expect things to work out for me.</p> <p>3 I feel my future is hopeless and will only get worse.</p> <p><b>3. Past Failure</b></p> <p>0 I do not feel like a failure.</p> <p>1 I have failed more than I should have.</p> <p>2 As I look back, I see a lot of failures.</p> <p>3 I feel I am a total failure as a person.</p> <p><b>4. Loss of Pleasure</b></p> <p>0 I get as much pleasure as I ever did from the things I enjoy.</p> <p>1 I don't enjoy things as much as I used to.</p> <p>2 I get very little pleasure from the things I used to enjoy.</p> <p>3 I can't get any pleasure from the things I used to enjoy.</p> <p><b>5. Guilty Feelings</b></p> <p>0 I don't feel particularly guilty.</p> <p>1 I feel guilty over many things I have done or should have done.</p> <p>2 I feel quite guilty most of the time.</p> <p>3 I feel guilty all of the time.</p>	<p><b>6. Punishment Feelings</b></p> <p>0 I don't feel I am being punished.</p> <p>1 I feel I may be punished.</p> <p>2 I expect to be punished.</p> <p>3 I feel I am being punished.</p> <p><b>7. Self-Dislike</b></p> <p>0 I feel the same about myself as ever.</p> <p>1 I have lost confidence in myself.</p> <p>2 I am disappointed in myself.</p> <p>3 I dislike myself.</p> <p><b>8. Self-Criticalness</b></p> <p>0 I don't criticize or blame myself more than usual.</p> <p>1 I am more critical of myself than I used to be.</p> <p>2 I criticize myself for all my faults.</p> <p>3 I blame myself for everything bad that happens.</p> <p><b>9. Suicidal Thought or Wishes</b></p> <p>0 I don't have any thoughts of killing myself.</p> <p>1 I have thoughts of killing myself, but I would not carry them out.</p> <p>2 I would like to kill myself.</p> <p>3 I would kill myself if I had the chance.</p> <p><b>10. Crying</b></p> <p>0 I don't cry anymore than I used to.</p> <p>1 I cry more than I used to.</p> <p>2 I cry over every little thing.</p> <p>3 I feel like crying, but I can't.</p>
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**11. Agitation**

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

**12. Loss of Interest**

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

**13. Indecisiveness**

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

**14. Worthlessness**

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compares to other people.
- 3 I feel utterly worthless.

**15. Loss of Energy**

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

**16. Changes in Sleeping Pattern**

- 0 I have not experienced any change in my sleeping pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can't get back to sleep.

**17. Irritability**

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

**18. Changes in Appetite**

- 0 I have not experienced any change in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual. .
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual. .
- 3a I have no appetite at all.
- 3b I crave food all the time.

**19. Concentration Difficulty**

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

**20. Tiredness or Fatigue**

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

**21. Loss of Interest in Sex**

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.



## APPENDIX K

## TRAIT SUBSCALE OF THE STATE-TRAIT ANXIETY INVENTORY

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *generally feel*. There are no right or wrong answers. Don't spend too much time on any statement but give the answer which seems to describe how you *generally feel*.

	<b>Almost Never</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost Always</b>
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I am satisfied with myself	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am 'calm, cool, and collected.'	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4

37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

## APPENDIX L

## PERCEIVED RELATIONSHIP QUALITY COMPONENTS

Below are some questions that ask about romantic relationships. Circle the answer that best describes your **current partner/relationship**. Please use the following scale:

	1	2	3	4	5	6	7
	Not at All						Extremely
1. How satisfied are you with your relationship?	1	2	3	4	5	6	7
2. How content are you with your relationship?	1	2	3	4	5	6	7
3. How happy are you with your relationship?	1	2	3	4	5	6	7
4. How committed are you to your relationship?	1	2	3	4	5	6	7
5. How dedicated are you to your relationship?	1	2	3	4	5	6	7
6. How devoted are you to your relationship?	1	2	3	4	5	6	7
7. How intimate is your relationship?	1	2	3	4	5	6	7
8. How close is your relationship?	1	2	3	4	5	6	7
9. How connected are you to your partner?	1	2	3	4	5	6	7
10. How much do you trust your partner?	1	2	3	4	5	6	7
11. How much can you count on your partner?	1	2	3	4	5	6	7
12. How dependable is your partner?	1	2	3	4	5	6	7
13. How passionate is your relationship?	1	2	3	4	5	6	7
14. How lustful is your relationship?	1	2	3	4	5	6	7
15. How sexually intense is your relationship?	1	2	3	4	5	6	7
16. How much do you love your partner?	1	2	3	4	5	6	7
17. How much do you adore your partner?	1	2	3	4	5	6	7
18. How much do you cherish your partner?	1	2	3	4	5	6	7

## APPENDIX M

## CONSENT FORM

**CONSENT TO PARTICIPATE IN RESEARCH**

Title of Study: Stress and Coping in Everyday Life

You are asked to participate in a research study conducted by Joyce Yu (graduate student) under the supervision of Dr. Josee Jarry (faculty), from the Psychology Department at the University of Windsor. This study will be used to fulfil the requirements for completion of a Master's Thesis.

If you have any questions or concerns about the research, please feel to contact the primary investigator, Joyce Yu, at (519) xxx-xxxx, or Dr. Josee Jarry (Faculty Supervisor) at (519) xxx-xxxx, extension xxxx.

**PURPOSE OF THE STUDY**

The goal of this study is to investigate the relationship between changes in eating behaviour, and how that is influenced by daily stress.

**PROCEDURES**

If you volunteer to participate in this study, we would ask you to do the following things:

You will be directed to an on-line survey, which should take about 60 minutes to complete. Please complete the survey in a quiet place where you are able to fully concentrate. After completing the survey, you will be directed to a secondary survey where you can fill in your personal information for verifying your bonus point.

**POTENTIAL RISKS AND DISCOMFORTS**

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

#### POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Participating in this study may help you discover some interesting insight about yourself and the way you function in specific areas of your life. Your participation also will aid in providing a unique contribution to the scientific community regarding the constructs under study.

#### PAYMENT FOR PARTICIPATION

You will receive 1 bonus point for 60 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

#### CONFIDENTIALITY

Any information that is obtained in connection with this study and can be used to identify you will remain confidential and secured in an encrypted file. However, we must collect your name and student number at the end of the study for you to receive your bonus point. Your data will be kept separate from your name and student number. Both files will be encrypted and stored on University of Windsor data servers. The information will be retained for 10 years, and will be securely wiped from the servers afterwards.

#### 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 without consequences of any kind. Each question has the option “Prefer not to answer”, as you have the right of declining to answer. However, you will have to complete the questionnaire in order to receive your bonus mark, though you are free to choose the “Prefer not to answer” option as frequently as desired. We encourage you to answer as much as you feel comfortable, as your answers are crucial to our investigation. 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 2012. Results will be posted on the University of Windsor REB website: [www.uwindsor.ca/reb](http://www.uwindsor.ca/reb)

Web address: www.uwindsor.ca/reb

Date when results are available:            October 2012           

#### SUBSEQUENT USE OF DATA

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

#### RIGHTS OF RESEARCH SUBJECTS

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](mailto:ethics@uwindsor.ca)

#### SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study, 'Stress and Coping in Everyday Life' as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I will print a copy of this consent form for my own reference.

\_\_\_\_\_  
Name of Subject

\_\_\_\_\_  
Signature of Subject

\_\_\_\_\_  
Date

#### SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

\_\_\_\_\_  
Signature of Investigator

\_\_\_\_\_  
Date

## APPENDIX N

## DEBRIEFING PAGE

Please feel free to contact Joyce Yu at xxxxx@uwindsor.ca if you have any further questions or concerns. We greatly appreciate your participation in this questionnaire.

**Please print this page for your reference.**

If you require any further assistance, the University of Windsor has a Student Counseling Center located in room 293 of the CAW Student Centre.

Other resources that may be of interest:

Bulimia Anorexia Nervosa Association (BANA)  
Services the Windsor-Essex, Chatham-Kent, and Sarnia-Lambton counties  
Telephone: (519) 969-2112  
Email: info@bana.ca  
Website: [www.bana.ca](http://www.bana.ca)

Canadian Mental Health Association (CMHA) - Windsor-Essex County Branch  
Telephone: (519) 255-7440  
Website: [www.cmha-weeb.on.ca](http://www.cmha-weeb.on.ca)

Community Crisis Centre of Windsor  
Telephone: (519) 973-4435  
Website: <http://windsoriessex.cioc.ca/record/WIN0762>

Distress Centre - Windsor-Essex County  
Telephone: (519) 256-5000  
Website: [www.dcwindsor.com](http://www.dcwindsor.com)

Mood Anxiety Treatment Service - Windsor Regional Hospital  
Telephone: (519) 257-5125  
Email: Leslie\_Davis@wrh.on.ca  
Website:  
[http://www.wrh.on.ca/Site\\_Published/wrh\\_internet/RichText.aspx?Body.QueryId.Id=3286&LeftNav.QueryId.Categories=173](http://www.wrh.on.ca/Site_Published/wrh_internet/RichText.aspx?Body.QueryId.Id=3286&LeftNav.QueryId.Categories=173)

Sexual Assault / Domestic Violence & Safekids Care Centre  
Telephone: (519) 255-2234  
Website: [www.sacc.to/gylb/satc/CentreID=32.htm](http://www.sacc.to/gylb/satc/CentreID=32.htm)

Sexual Assault Crisis Centre

Telephone: (519) 253-3100

Website: [www.wincom.net/~sacc](http://www.wincom.net/~sacc)



## VITA AUCTORIS

NAME	Joyce Wing-Yan Yu
PLACE OF BIRTH	Hong Kong, S.A.R. of the People's Republic of China
YEAR OF BIRTH	1989
EDUCATION	Turner Fenton Secondary School, Brampton, Ontario 2002 – 2006 IBDP Dalhousie University, Halifax, Nova Scotia 2006 – 2010 B.Sc. (Hons) Psychology University of Windsor, Windsor, Ontario 2010 – Present M.A. Clinical Psychology