2011

# Body Mass Index and Body Image Dysfunction as Predictors of Women's Perceived Romantic Relationship Quality

Carolyne Lee
*University of Windsor*

# Body Mass Index and Body Image Dysfunction as Predictors of Women's Perceived Romantic Relationship Quality

by

Carolyne E. Lee

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

Windsor, Ontario, Canada
2011

Body Mass Index and Body Image Dysfunction as Predictors of Women's

Perceived Romantic Relationship Quality

by

Carolyne E. Lee

APPROVED BY:

---

Dr. S. Woodruff-Atkinson
Department of Kinesiology

---

Dr. C. Thomas
Department of Psychology

---

Dr. J. Jarry, Advisor
Department of Psychology

---

Dr. A. Scoboria, Chair of Defense
Department of Psychology

16 September 2011

## Author's Declaration of Originality

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained a written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University.

## Abstract

The purpose of the current study was to assess the extent to which body mass index (BMI) and body image disturbance predicted perceived romantic relationship quality. 139 female undergraduate students involved in romantic relationships completed self-report instruments and had their height and weight measured. Consistent with hypotheses, women with greater body dissatisfaction reported poorer overall romantic relationship quality. Body dissatisfaction also predicted lower levels of relationship satisfaction, trust, and love. Contrary to expectations, the effect of body dissatisfaction on overall relationship quality was not more pronounced among overweight and obese women. BMI was unrelated to overall relationship quality; however, BMI did predict lower levels of passion in romantic partnerships. Similarly, dysfunctional body image investment was unrelated to overall relationship quality, but predicted lower levels of intimacy and trust. These findings can inform therapy with distressed couples who may benefit from interventions aimed at improving the female partner's body image attitudes.

Acknowledgements

I would like to express my sincerest gratitude to Dr. Cheryl Thomas for the hours of hard work she put into this project. Your guidance and support along the way have been invaluable.

I would also like to thank my proposal committee members and fellow research lab members for their feedback and enthusiasm in this project.

TABLE OF CONTENTS

List of Tables

# List of Appendices

# Introduction

## Overview

Humans are social beings with an inborn drive to form close, emotional bonds with other people (Miller, Perlman & Brehm, 2007). Our relationships, particularly our romantic relationships, can have a profound effect on our physical and psychological health (Berscheid & Regan, 2005). For example, married individuals experience lower morbidity and mortality than their single counterparts (Berscheid & Regan, 2005) and report being happier than those who are not married (Diener, Gohm, Suh, & Oishi, 2000; Wood, Rhodes, & Whelan, 1989). However, not all relationships are equally healthy or beneficial; the quality of the partnership is of great importance. Research demonstrates that successful romantic relationships are associated with happiness and subjective well-being (Demir, 2008; Dush & Amato, 2005; Gove, Hughes, & Style, 1983; Myers, 2000), whereas relationships that are characterized by conflict and distress can have harmful consequences. More specifically, husbands and wives who do not get along are at a greater risk for depression than those who are single, separated, and divorced (Myers, 2000; Weissman, 1987). Longitudinal research has also revealed a significant association between marital quality and physical health, after controlling for work stress, education, and income (Wickrama, Lorenz, Conger, & Elder, Jr., 1997). Interestingly, relationship quality appears to have a greater effect on the health and well-being of women than men. For example, marital interaction studies indicate that women's objective physiological health suffers more from martial conflict than does men's (Kiecolt-Glaser & Newton, 2001). Gove et al. (1983) also showed that the relationship between marital happiness and mental health was more pronounced for women than for men.

In sum, research shows that high quality romantic relationships contribute to the happiness and health of both partners whereas poor quality relationships are sources of stress that can have detrimental effects. Consequently, identifying factors that commonly affect relationship quality is important.

Prior research has shown that the psychological well-being of individual partners can have powerful effects on romantic relationship quality. Consider the well-documented association between self-esteem and relationship functioning: people who hold negative and unfavourable judgments of themselves underestimate their partners' love for them, feel insecure in their relationships, and defensively distance themselves following conflicts with their partner (Murray et al., 2000; Murray et al., 2001; Murray et al., 2002). The purpose of the current study was to investigate the impact of two other individual characteristics likely to affect women's romantic relationships: weight and body image dysfunction.

Attraction is generally the driving force behind relationship initiation (Berscheid & Regan, 2005) and physical attractiveness plays a particularly crucial role in the evaluation of a potential romantic partner. Although both men and women value physical attractiveness in a potential mate, this is especially true for men (Baron, Byrne, & Watson, 2005). Judgments about body weight have a large bearing on judgments about the overall physical attractiveness of a potential partner (Baron et al., 2005; Regan, 1996).

Preferences for physical attractiveness and beauty are largely determined by our social context (Baron et al., 2005). In Western cultures, the feminine beauty ideal includes, among other characteristics, a thin body type (Cafri, Yamamiya, Brannick, &

Thompson, 2005; Thompson & Heinberg, 1999). The value placed on beauty and thinness is so ingrained in our culture that people tend to hold negative attitudes and beliefs about individuals who deviate from the thin ideal (Puhl, Moss-Racusin, Schwartz, & Brownell, 2007). Consequently, overweight and obese individuals often experience considerable difficulty in the romantic domain. Compared to their average weight counterparts, heavier females are considered less attractive (Rothblum, Miller, & Garbutt, 1988), less sexually desirable (Regan, 1996), and less likely to date and marry (Fu & Goldman, 1986; Sheets & Ajmere, 2005).

Weight seems to interfere with romantic relationship initiation, but the research literature is less clear regarding the effect of weight on established relationships. Whereas some research shows that the romantic relationships of overweight and obese females are of poorer quality (Boyes & Latner, 2009; Markey, Markey, & Birch, 2001), other studies have reported no such association (Carr & Friedman, 2006; Sobal, Rauschenbach & Frongillo, 1995). A primary purpose of the current research was therefore to clarify the impact of weight on romantic relationship quality.

A woman's weight not only affects how others view her, it also has a substantial influence on how she views herself. There is a clear link between weight and body image evaluation, such that heavier females tend to be more dissatisfied with their bodies (Markey & Markey, 2005; Markey, Markey & Birch, 2004; Schwartz & Brownell, 2004). A woman's body image concerns also appear to have a meaningful impact on the quality of her romantic partnerships, regardless of her weight (Friedman, Dixon, Brownell, Whisman, & Wilfley, 1999**;** Morrison, Doss, & Perez, 2009). For example, women's feelings about their bodies have been linked with a number of relationship characteristics,

from levels of trust to feelings of love (Ambwani & Strauss, 2007; Brennan & Shaver, 1995; Markey et al., 2001). The aim of the current study was to replicate the results of past research showing the harmful effect of body image disturbances on romantic relationships. Additionally, a new model was tested in order to assess the extent to which body image dissatisfaction moderates the effect of weight status on relationship quality.

In the review that follows, definitional and conceptual issues related to relationship quality, weight, and body image are discussed. The empirical literature that has explored links between these variables is also reviewed, and the rationale for the current study is described in greater detail.

**Defining and Measuring Romantic Relationship Quality**

Romantic relationship quality has been defined and operationalized in various ways by different researchers in the field, as evidenced by the large number of existing terms that have been used to describe this concept. Relationship "satisfaction", "adjustment", "success", and "happiness" are some terms that have been used synonymously with "relationship quality". Poor conceptualization and articulation of the relationship quality construct has contributed to the lack of a consistent operational definition. For example, Locke and Wallace (1959) provide only a vague definition of marital quality (or what they call "marital adjustment"), referring to it as the "accommodation of a husband and wife to each other at a given time".

When a construct has been poorly defined, its measurement is also problematic. Many of the existing relationship quality measures have been criticized for lacking a strong theoretical background. Furthermore, many test authors fail to provide evidence

of adequate construct validity (Berscheid & Regan, 2005). Another problem is that the majority of available measures are designed to assess the quality of marital relationships (Fincham, Beach, & Kemp-Fincham, 1997; Berscheid & Regan, 2005). In studies of dating samples, researchers often use measures intended to assess marital quality and modify the items for use with unmarried participants. For example, Katz and colleagues (1997) reworded items on the Quality of Marriage Index-Revised in order to make them relevant to dating relationships. It is not known to what extent such changes impact the validity and reliability of the measures. Lastly, there has been little standardization of measures across studies, although some measures have enjoyed more widespread use than others. Among these are the Locke-Wallace Marital Adjustment Test (MAT; Locke & Wallace, 1959) and the Dyadic Adjustment Scale (DAS; Spanier, 1976).

The MAT is a 15-item self-report measure that was designed to assess the quality of marital relationships. Its advantages are its brevity, reliability, and ability to discriminate between maladjusted couples (those who are separated, divorced, or in treatment) and couples whose close friends judged them to be exceptionally well-adjusted (Locke & Wallace, 1959). The DAS is another widely used measure of relationship quality. This 32-item self-report measure has four subscales: Dyadic Consensus, Dyadic Satisfaction, Affectional Expression, and Dyadic Cohesion. Unlike the large majority of existing measures, the DAS was designed to assess the quality of romantic relationships in general. Another advantage of the DAS is that it is psychometrically sound and supported by factor analytic research (Spanier, 1976).

Although the MAT and the DAS are among the most commonly used measures of relationship quality, they have clear shortcomings. Notably, both measures were

developed with little theoretical foundation, and therefore lack construct validity (Berscheid & Regan, 2005; Fincham & Beach, 2006; Fincham et al., 1997). Additionally, both the MAT and DAS include items that measure subjective components (e.g. evaluative inferences about the happiness in the relationship) as well as behavioural components (e.g. frequency of quarrels in the relationship). Consequently, they have been called omnibus measures of relationship quality because of the difficulty inherent in interpreting their resulting scores (Berscheid & Regan, 2005; Fincham & Beach, 2006; Fincham et al., 1997). Omnibus measures can be distinguished from measures that assess only feelings about the relationship, such as the Quality of Marriage Index (QMI; Norton, 1983). Critics of the MAT and DAS also argue that both measures inappropriately give more weight to particular components of relationship quality than to others, without presenting the rationale for such decisions (Fincham & Beach, 2006; Norton, 1983). For example, only four of 32 DAS items assess affection in a romantic relationship (compared to the 13 items that assess consensus), despite the fact that many consider affection to be a crucial component of relationship quality (Norton, 1983).

An ongoing debate in relationship research concerns whether relationship quality is unidimensional or multidimensional in nature (Berscheid & Regan, 2005; Fincham & Beach, 2006; Fincham et al., 1997). The unidimensional approach captures global evaluations of romantic relationship quality. Examples of unidimensional measures include the Quality of Marriage Index (QMI; Norton, 1983) and the Kansas Marital Satisfaction Scale (KMSS; Schumm, Paff-Bergen, Hatch, Obiorah, Copeland, Meens, & Bugaighis, 1986). The unidimensional approach is desirable in that it is straightforward and easily interpretable. However, it has been criticized for merely characterizing

romantic relationship quality as positive or negative, and as such, providing limited conceptual understanding (Fowers, 1990). More recently, researchers have viewed relationship quality as a multidimensional construct. Adherents of this approach believe that relationship quality is comprised of a number of positive and negative evaluations that can be separated into distinct but related dimensions. These individual evaluations can then be combined in order to provide a global measure of relationship quality (Fincham et al., 1997; Fletcher, Simpson, & Thomas, 2000b; Hassebrauck & Fehr, 2002; Snyder, 1997). Overall, it appears that unidimensional measures of relationship quality are best utilized as screening tools or to make decisions about whether or not a couple may benefit from relationship counseling. However, when relationship quality is a central research variable, a multidimensional measure is more appropriate because of the greater breadth of information it is able to provide (Fincham & Beach, 2006).

Another problematic aspect of relationship research is the confusion between the terms "relationship satisfaction" and "relationship quality". While some researchers use the terms interchangeably, others view satisfaction as only one component of relationship quality. For the purpose of this study, "satisfaction" will refer specifically to an individual's feelings of happiness regarding their romantic relationship. "Quality", on the other hand, will be conceptualized as a broader construct, which includes satisfaction, as well as a number of other constructs thought to contribute to the overall quality of the relationship (e.g. trust, intimacy). This perspective is consistent with contemporary research and reflects a multidimensional approach to the study of relationship quality (Fletcher et al., 2000b; Hassebrauck & Fehr, 2002; Spanier, 1976).

When using multidimensional measures, it is possible for overall relationship quality to be poor even if relationship satisfaction exists. For example, an individual may self-report satisfaction with a partner, but may also perceive the relationship to be lacking in passion, love, and intimacy. Intuitively, it might seem that subjective relationship satisfaction should be the only indicator of perceived relationship quality. However, if a relationship is lacking in other essential characteristics, the relationship is not likely to be successful or to endure over time. Relationship satisfaction is perhaps best conceptualized as a necessary but insufficient component of relationship quality. It is important to note that this perspective recognizes that the components of relationship quality are related to each other. Thus, if a relationship has low levels of passion, love, and intimacy, an individual is unlikely to be satisfied in the relationship. Indeed, although the scenario described above—where many components of the relationship are lacking but satisfaction exists—is possible, this would be extremely rare given the association between the constructs.

If one accepts the multidimensional view of romantic relationship quality, the next challenge is to identify the specific dimensions that contribute to overall relationship quality. Here too, researchers have differed in their understanding of the construct. Spanier (1976) argued that relationship quality has four dimensions: consensus, satisfaction, affectional expression, and cohesion. Hassebrauck and Fehr (2002) asked participants to identify features that are typical of a good romantic relationship. Their factor analytic research identified four different dimensions of relationship quality: intimacy, agreement, independence, and sexuality, with intimacy having the greatest influence on relationship quality. Snyder (1997) proposed that romantic relationship

quality has eleven components: global distress, affective communication, problem-solving communication, time taken together, disagreement about finances, sexual dissatisfaction, role orientation, family history of distress, aggression, dissatisfaction with children, and conflict over child rearing.

One of the more recent attempts to identify the dimensions of relationship quality was initiated by Fletcher, Simpson, and Thomas (2000b). These researchers conducted a review of the literature on intimate partnerships and identified six constructs that commonly represent distinct components of perceived relationship quality and for which standardized and widely used self-report scales had been developed: satisfaction, commitment, trust, intimacy, passion, and love. The measure constructed by Fletcher and colleagues (2000b), the Perceived Relationship Quality Components (PRQC) Inventory, was selected for use in the current study to obtain both global and specific indicators of romantic relationship quality. The PRQC Inventory is a relatively recent relationship quality measure. However, when compared to commonly used unidimensional and omnibus measures, it has the advantage of allowing for distinctions among couples and providing a clearer picture of their unique partnership. Use of the PRQC Inventory in the proposed study will allow specific assessment of how weight and body image variables affect overall relationship quality, as well as six specific aspects of relationship quality.

## Weight, Weight Stigma, and Romantic Relationships

**Weight**. Research investigating evaluations of female attractiveness have typically examined two body characteristics: body shape and body weight status. Body

shape or proportion is most often measured using waist-to-hip ratio (WHR) while body weight status is typically measured using body mass index (BMI).

WHR is a measure of body fat distribution that is calculated by dividing the circumference of the waist by the circumference of the hips. Singh (1993) found that men prefer women with a WHR of .7, and the idea of a WHR preference has received support in some cross-cultural research (Singh & Luis, 1995). Singh (1993) proposes that the WHR preference has an evolutionary basis, whereby women with a lower WHR are viewed as more reproductively healthy, and are therefore more attractive to men. However, more recent research has cast doubt on the significance of the WHR. Critics point to methodological flaws in Singh's studies, such as his use of non-realistic line drawings of female figures, the way in which he derived his attractiveness composite ratings (which may have exaggerated the effects of his WHR manipulations), and the likelihood that participants were able to guess the experimental hypotheses (Henss, 1995; Puhl & Boland, 2001). Furthermore, other researchers have not been able to replicate Singh's findings (Puhl & Boland, 2001). Although body proportion does appear to have some effect on evaluations of female attractiveness, the majority of researchers in the field agree that body weight status (as measured by BMI) is a better predictor of perceived female attractiveness than body proportion (as measured by WHR) (Baron et al., 2005; Puhl & Boland, 2001; Swami & Tovée, 2005; Wilson, Tripp, & Boland, 2005).

BMI, also known as Quetelet's Index (Garrow & Webster, 1985), is used to obtain an indirect measure of adiposity, or body fat, and may be used to distinguish between underweight, normal weight, overweight, and obese body weight status. BMI is a height-corrected measure of weight, as it is obtained by dividing an individual's weight

in kilograms by their height in metres, squared. The most commonly used definitions of BMI were published by the World Health Organization in 2000 and Health Canada in 2003. According to these guidelines, a BMI score of less than 18.5 indicates underweight, a score between 18.5 and 24.9 indicates normal weight, a score between 25.0 to 29.9 indicates overweight, and a score of 30.0 or above indicates obesity.

It is not uncommon for researchers to assess BMI via self-report—that is, participants report their height and weight, and researchers calculate BMI based on these values. The use of self-reported BMI has clear benefits. For example, obtaining self-reported BMI is much more convenient than obtaining objective BMI measurements. Often researchers justify the use of self-reported BMI values based on their strong correlations—often greater than .9—with objectively measured BMI (e.g. Pearce, Boergers, & Prinstein, 2002). Some researchers acknowledge that self-reports may be biased, but downplay the effect of the bias as trivial (e.g. Carr & Friedman, 2006). In contrast, others have reported significant differences between self-reported and objective BMI. These researchers have observed that participants have a tendency to overestimate their height and underestimate their weight, resulting in an underreporting of BMI (Mendelson, Mendelson, & Andrews, 2000; Tienboon, Wahlqvist, & Rutishauser, 1992). This bias can have serious consequences; for example, research relying on self-reported BMI data has been shown to underestimate the prevalence of obesity and overestimate the relationship between BMI and disease (Gorber, Shields, Tremblay, & McDowell, 2008). Given the likelihood of bias inherent in self-reports, the use of objective measures of BMI is essential, especially when weight status is a key variable under investigation.

**Weight stigma**. Weight stigma refers to negative attitudes and beliefs about body weight. This stigma is pervasive in Western society, and manifests itself through stereotypes, prejudice and rejection of overweight and obese individuals (Puhl, Moss-Racusin, Schwartz, & Brownell, 2007). Weight stigma is particularly evident in the romantic domain. Numerous studies have demonstrated that others view overweight individuals as less attractive than their ideal partner and less attractive than individuals of normal weight (e.g. Rothblum, Miller, & Garbutt, 1988).

In a study that highlights the extreme extent of weight stigma, Sitton and Blanchard (1995) showed that men were more likely to respond to a dating advertisement when the woman was described as a recovering drug addict than when she was described as 50 pounds overweight. Similarly, college students rank those with a history of sexually transmitted infections as more sexually desirable partners than the obese (Chen & Brown, 2005).

Overweight and obese individuals are also perceived by others to have fundamentally different love experiences than normal weight individuals. In a study conducted by Harris (1990), participants viewed a picture of an opposite-sex individual who was either normal weight or overweight. Participants judged "fat Chris" to have been in love less often and as more likely to be single than "normal weight Chris". Furthermore, heavier individuals were viewed as deserving of less desirable romantic partners: participants described the ideal partner for "fat Chris" as heavier, less attractive, and less intelligent than the ideal partner for "normal weight Chris".

It appears that heavier women are particularly likely to be seen as poor romantic partners. For example, when compared to both normal weight women and obese men,

obese women are perceived as less likely to have sexual desire and experiences, less likely to have a romantic partner, and more likely to have had fewer sexual partners (Horsburgh-McLeod, Latner, & O'Brien, 2009; Regan, 1996). Others also tend to perceive obese women as less sexually attractive, desirable, skilled, warm, responsive, and more likely to be virgins (Chen & Brown, 2005; Regan, 1996). Unfortunately, perceptions of overweight and obese individuals seem to be born out in reality; individuals who are overweight and obese often internalize the negative social weight stigma. For example, regardless of their relationship status, overweight females tend to self-rate their romantic competence as low (Mendelson et al., 2000).

Overweight and obese females are indeed more likely to experience romantic failure. Overweight adolescent and young adult females report that their weight interferes with romantic pursuits, such as initiating dating (Tiggeman & Rothblum, 1988). These findings are supported by a study on adolescent females demonstrating that obese teens are less likely to date than overweight teens, who are in turn, less likely to date than their average weight peers (Pearce, Boergers, & Prinstein, 2002). Similar results have been found with adults: the overweight and obese are less likely to date and marry than those of normal weight (Fu & Goldman, 1986; Sheets & Ajmere, 2005). In one longitudinal study, overweight women were 20% less likely to be married at seven-year follow-up than women of normal weight (Gortmaker, Must, Perrin, Sobol, and Dietz, 1993).

While the literature indicates that heavier females have difficulty initiating romantic relationships, less is known about the effect of BMI on romantic relationships that are already established. Do overweight women also have trouble maintaining their

intimate partnerships? Some research suggests that BMI can, indeed, negatively impact relationship quality. For example, Puhl and Brownell (2006) reported that 47% of female participants recruited from weight loss support groups reported their spouse as a source of weight stigma. In addition, 12% described their worst stigmatizing experience, which usually took the form of verbal abuse (e.g., intentional negative comments and derogatory names), as being enacted by their romantic partner (Puhl et al., 2007).

Compared to average weight women, overweight women perceive their romantic partners to be less satisfied with their relationship and less satisfied with their body (Markey, Markey, & Birch, 2004; Stakes & Lauer, 1987). In a recent study, Boyes and Latner (2009) found that heavier women were more likely to expect that their partners would end their relationship. Conversely, males in relationships with heavier females believed that their female partners were more likely to end the relationship. Overweight and obese women were also more likely to believe that they did not live up to their partner's ideal mate, and it turned out that these perceptions were accurate—male partners of heavier women reported that their mate was less attractive than their ideal partner (Boyes & Latner, 2009). Heavier women also tend to pair up with less educated men who rate themselves as lower in mate value—that is, the male partners of heavier women believe that they are less attractive and have less status and resources to offer than other men (Boyes & Latner, 2009; Garn, Sullivan, & Hawthorn, 1989; Lipowicz, 2003).

Whereas some researchers have found that heavier women report poorer quality romantic relationships (Boyes & Latner, 2009; Markey et al., 2001), others have not found a consistent association between BMI and relationship quality (Carr & Friedman,

2006; Sobal et al., 1995). Sheets and Ajmere (2005) are frequently cited as finding a negative association between women's weight and relationship satisfaction, when in fact, the correlation between the two was small and only marginally significant ($r = -.13$, $p < .10$). In another study, weight was found to be related to poorer quality family relationships, but not significantly related to the quality of marital relationships (Carr & Friedman, 2006). Another aim of the current study was to investigate whether these inconsistent findings could be explained by an important third variable moderating the link between BMI and relationship quality: body image evaluation.

## Body Image and Weight

**Body image**. Body image is currently conceptualized as a multidimensional phenomenon that includes perceptions and attitudes about the body, particularly its size, shape, and aesthetics (Cash & Pruzinsky, 1990; Cash, Thériault, & Annis, 2004d). Attitudes about one's body include an evaluative and an investment component (Cash, Melynk, & Hrabosky, 2004b). Body image evaluation refers to positive or negative appraisals of one's body (i.e. that is, body satisfaction or dissatisfaction). Body image investment is a related but distinct concept that refers to the amount of psychological investment in one's own appearance (i.e. beliefs about the importance, meaning, and influence of appearance in one's life) (Cash, Santos, & Williams, 2004). Cash and colleagues (2004b) distinguish between two different types of body image investment. The first type refers to people's beliefs about how their appearance influences their worth and sense of self. As such, it is thought to reflect a maladaptive orientation towards one's body. A second type of body image investment refers to the extent to which people

attend to, value, and manage their appearance. This type of body image investment may not necessarily reflect a dysfunctional orientation towards one's body. The majority of the body image literature has focused solely on evaluation, while the study of body image investment is a much more recent research endeavour (Cash et al., 2004b).

Despite a dramatic increase in the amount of body image research that has been conducted over the past few decades, there is still some disagreement about what exactly constitutes body image (Cash & Pruzinsky, 2002). Some researchers have argued for a more inclusive understanding of the construct. For example, some have pointed to the importance of including affective components (e.g. feelings about one's appearance), whereas others have argued that body image should also include behavioural components (e.g. weight loss attempts) (Banfield & McCabe, 2002; Cash, 2000). In the current study, the focus was strictly on body image evaluation and investment, because there is consensus that these reflect central components of body image and because they have demonstrated or hypothetically probable ties to relationship outcomes.

Preliminary research suggests a weak correlation between BMI and dysfunctional body image investment (Cash et al., 2004b). That is, overweight and obese women are slightly more likely to have a maladaptive investment in their appearance and to equate their appearance with their self worth. The association between BMI and body image evaluation is much more robust, and has been consistently replicated; the overweight and obese are more likely to be dissatisfied with their bodies than their normal weight counterparts. This link is stronger for women than it is for men, with overweight and obese women reporting the highest levels of body dissatisfaction (Markey & Markey, 2006; Markey et al., 2004; Mendelson et al., 2000; Schwartz & Brownell, 2004).

However, it is important to note that not all obese individuals suffer from body image dissatisfaction (Schwartz & Brownell, 2004). This stipulation is important because it could account for the inconsistent findings regarding the link between BMI and relationship quality. Perhaps only overweight and obese women who also suffer from body image dissatisfaction are at risk of romantic failure.

**Body Image and Romantic Relationships**

A growing body of research suggests that body image concerns and romantic relationships are closely linked and mutually influential. Intimate partnerships may have either positive and protective or harmful influences on peoples' feelings about their bodies. Using qualitative methods, Ambwani and Strauss (2007) found that 35% of men and 61% of women felt that their romantic relationship boosted their self-esteem and/or body satisfaction. In another study, men's relationship satisfaction was predictive of decreased dieting and greater body satisfaction in their female partners. The researchers suggest that men's relationship satisfaction may have a greater influence on women's body image than does women's relationship satisfaction (Boyes, Fletcher, & Latner, 2007).

Relationship perceptions can also have a powerful influence on body image attitudes. Markey, Markey and Birch (2004) found that women who perceived their husbands as satisfied with their bodies also reported greater satisfaction with their own bodies. Conversely, women who perceive their partners to be dissatisfied with their bodies report lower satisfaction with their own bodies (Pole, Crowther, & Schell, 2004). Others have highlighted how perceived partner ideals can have important implications for

relationship functioning. For example, the discrepancy between how a woman views herself and her perceptions of her partner's ideal woman is predictive of her body image dysfunction (Tantleff-Dunn & Thompson, 1995). In sum, perceived romantic relationship functioning can significantly affect how people, particularly women, feel about their bodies.

It is also increasingly clear that body image concerns, particularly body image dissatisfaction, can impact romantic relationship functioning. As mentioned earlier, recent research has subdivided the relationship quality construct into several components: satisfaction, commitment, trust, intimacy, passion, and love (Fletcher et al., 2000b). The existing literature suggests that body image dysfunction is related to many aspects of relationship quality. For example, Cash and colleagues (2004d) found that women who report body image dissatisfaction, dysfunctional body image investment, and frequent dysphoric body image emotions report greater fears of emotional intimacy in their romantic partnerships. Body image dissatisfaction has also been tied to jealousy and a lack of trust in relationships (Ambwani & Strauss, 2007; Brennan & Shaver, 1995).

Available evidence indicates that body image evaluation is positively associated with satisfaction in dating and marital relationships, even after controlling for BMI (Friedman et al., 1999; Hoyt & Kogan, 2001; Morrison et al., 2009). For example, women with subclinical and clinical levels of bulimic symptoms who participated in a 31-month longitudinal study reported lower satisfaction in their romantic relationships at follow-up (Thelen, Kanakis, Farmer, & Pruitt, 1993). More recently, Morrison and colleagues (2009) reported that women who had high drive for thinness and who reported greater body dissatisfaction were more likely to experience a decrease in their

relationship satisfaction over a two-month period. In this same study, body image dissatisfaction during physical intimacy was associated with an increase in negative relationship events (e.g. being criticized or having a disagreement with one's partner), suggesting that physical intimacy may be an important mechanism through which body image disturbances affect relationship functioning (Morrison et al., 2009).

In fact, a number of researchers have reported an association between body image disturbance and poor sexual functioning (Ambwani & Strauss, 2007; Cash, Maikkula & Yamamiya, 2004a; Wiederman, 2002). Body image dissatisfaction is commonly associated with an avoidance of sexual activities (Faith & Schare, 1993). In one study of individuals involved in long-term relationships, body dissatisfaction, overweight preoccupation, and a dysfunctional investment in one's appearance were associated with an anxious focus on and avoidance of body exposure during sex. This anxious and avoidant body focus was in turn, associated with less enjoyment of sex, less frequent desire for sex, and poorer quality experiences of arousal and orgasm (Cash et al., 2004a).

Lastly, body image dysfunction has been found to relate to feelings and attitudes towards love. For example, in a study of married couples, Markey and colleagues (2001) found that women's body image concerns (e.g. perceived fatness, importance of weight) were negatively associated with their reports about the level of love in the relationship. Raciti and Hendrick (1992) reported that women with eating disorder characteristics were less likely to endorse passionate and friendship-based love styles, and more likely to endorse a love style characterized by possessiveness and jealousy.

In sum, the quality of romantic relationships both influences and is influenced by women's body image. It is important to emphasize that the majority of research in this

area is correlational, and therefore cannot establish the direction of causality. Regardless, the literature provides strong support for an association between body image evaluation and relationship quality. Existing research suggests that a dysfunctional body image investment is also related to relationship quality, although significantly fewer studies have investigated this association.

**Rationale for the Proposed Study**

A consensus about whether weight is directly associated with the quality of romantic relationships does not exist in the literature. Past studies have found that, compared to normal weight women, overweight and obese women are more likely to be body dissatisfied and to equate their appearance with their self-worth. Furthermore, body image dysfunction is associated with poorer relationship quality. On the other hand, not all overweight or obese women are dissatisfied with their bodies. Research to date has not shed much light on the inconsistent findings regarding the link between weight and relationship quality. It is possible that these inconsistencies could be explained by the failure to account for body image dissatisfaction. The current study aimed to clarify the impact of weight on relationship quality, as well as to investigate whether body image dissatisfaction moderated this association. The impact of body image evaluation and investment on relationship quality was also assessed.

**The Proposed Study and Past Methodological Issues**

A number of methodological problems have been identified that may have compromised the validity of some previous studies, and which could help explain

conflicting results in this area of research. Several of these were addressed in the current study. First, objective measures of height and weight were used in the calculation of BMI, in addition to participants' self-reported height and weight. This ensured that BMI reports were accurate across participants, and avoided problems arising from the observed tendency of participants to overestimate their height or underestimate their weight. Differences between the two methods of BMI measurement were also assessed.

Second, possible confounds in the association between BMI and relationship quality have not always been considered in prior studies. In the current study, self-esteem, age, and eating disturbances were assessed as possible covariates in order to maintain internal validity.

Third, several studies in this area of research have relatively small samples of overweight and obese women. For example, one of the major strengths of Boyes and Latner's (2009) study was that they were able to obtain measures of relationship quality from the perspective of both partners in the relationship. However, presumably due to the difficulty in recruiting couples, their sample size was relatively small ($N = 57$) and less than 25% of participants were overweight or obese. In the current study, proactive recruitment strategies were employed to generate a sample that included a sufficient number of overweight and obese females.

Finally, as previously discussed, many studies have operationalized relationship quality in less than optimal ways. Single-item measures are problematic because they are too simplistic and often have little psychometric support. Omnibus measures of relationship quality yield results that are difficult to interpret. Unidimensional measures of relationship quality limit the ability to detect important distinctions among

relationships. In the current study, the use of a multidimensional measure of relationship quality extends the existing literature by examining how weight and body image variables may differentially relate to specific components of romantic relationship quality.

The current study was correlational in design. In line with the existing research in this area BMI, body image evaluation, body image investment, and romantic relationship quality were operationalized as continuous variables. This avoids the problem of creating artificial categories (e.g. high versus low BMI), which can result in findings with poor ecological validity.

**Research Questions and Hypotheses**

The goals of this study were to assess whether BMI, body image investment, and body image evaluation predicted overall romantic relationship quality, as well as to assess whether body image evaluation moderates the effect of BMI on relationship quality. Two specific hypotheses were investigated:

1. Regardless of BMI, women who are dissatisfied with their bodies will report poorer overall romantic relationship quality than women who are satisfied with their bodies (main effect of body image evaluation).
2. The impact of BMI on overall romantic relationship quality will be moderated by body image evaluation (BMI by body image evaluation interaction).
    a. Although body image dissatisfaction was expected to impact romantic relationship quality for all participants, the effect was expected to be more pronounced among overweight and obese women. Normal weight women who are body satisfied were expected to have the highest relationship

quality, whereas overweight and obese women who are body dissatisfied were expected to have the poorest relationship quality.

No specific hypothesis was made regarding the association between BMI and romantic relationship quality, given that prior research in this area has yielded contradictory findings. Similarly, no hypothesis was made regarding the association between body image investment and romantic relationship quality, as the existing research in this area is sparse.

The impact of BMI and body image variables on the various components of relationship quality—namely, satisfaction, commitment, intimacy, trust, passion, and love—were also evaluated. Differences between BMIs based on objective versus self-reported height and weight were also examined.

## Method

### Participants

**Participant characteristics**. The participants were 139 female undergraduate students at the University of Windsor. They ranged from 18 to 25 years of age ($M$ = 20.69, $SD$ = 1.86) and reported being involved in an exclusive romantic relationship for a minimum duration of three months ($M$ = 27.93, $SD$ = 18.08); 89.9% ($n$ = 125) were involved in dating relationships, 6.5% ($n$ = 9) were engaged, and 3.6% ($n$ = 5) were married. 11.5% ($n$ = 16) reported living with their significant other. Most identified their sexual orientation as heterosexual (97.1%, $n$ = 135), 2.2% ($n$ = 3) identified as bisexual, and one participant did not report her sexual orientation.

With respect to the racial/ethnic breakdown of the sample, 76.3% ($n$ = 106) of participants identified as Caucasian/White, 8.6% ($n$ = 12) identified as Asian/Pacific Islander, 5.8% ($n$ = 8) identified as "Other", 3.6% ($n$ = 5) identified as African-Canadian/Black, 3.6% ($n$ = 5) identified as Middle Eastern, and 0.7% ($n$ = 1) identified as First Nations. Two participants did not report their ethnicity. Of the 139 participants, 18.7% ($n$ = 26) were in Year 1 of their undergraduate degree, 27.3% ($n$ = 38) were in Year 2, 28.8% ($n$ = 40) were in Year 3, 21.6% ($n$ = 30) were in Year 4, and 2.9% were in Year 5 ($n$ = 4). One participant did not report her year of study.

Based on objective measures of height and weight, and according to the BMI classifications established by the WHO (2000) and Health Canada (2003), 5.8% ($n$ = 8) of participants were underweight (BMI < 18.5), 59.0% ($n$ = 82) were of normal weight (BMI = 18.5 to 24.9), 21.6 % ($n$ = 30) were overweight (BMI = 25 to 29.9), and 13.7% ($n$ = 19) were obese (BMI ≥ 30). Data collected from 2007 to 2009 indicated that, in the general population of women between the ages of 18 and 39, 5.0% were underweight, 52.4% were normal weight, 22.9% were overweight, and 19.7% were obese (Canadian Health Measures Survey, 2010). Thus, participants' BMI generally conformed to the BMI distribution of Canadian women in a similar age range.

**Participant recruitment**. An *a priori* power analysis was conducted in order to determine the sample size necessary for multiple regression analysis. The power analysis revealed that in order to detect a medium effect ($f^2$ = .15), when alpha is set at .05 and power is set at .95, 129 participants were required. A total of 151 individuals were recruited for participation in the current study. However, 12 of these respondents had to

be excluded because they did not meet the inclusion criteria, resulting in a final sample of 139.

Participants were recruited through the Psychology Department Participant Pool at the University of Windsor. Undergraduate students who register for the pool at the beginning of the term are permitted to earn course credits in eligible psychology courses through research participation. An online web-based system allows students to register for the pool, provide demographic information, and respond to screening questions.

The current research was presented to potential participants as a study intended to assess "personal characteristics that relate to interpersonal relationships" (see Appendix A). Students were eligible to participate if they were female, between the ages of 18 and 25, and were currently involved in an exclusive romantic relationship for a minimum duration of three months. Students who met inclusion criteria and who were interested in participating in the study signed up for prearranged testing sessions.

The proportion of overweight and obese participants who signed up for early testing sessions was relatively small. Therefore, a proactive recruitment strategy was employed two weeks into the study in order to sample a greater number of overweight and obese participants. In particular, two screening questions—"Do you consider yourself to be overweight?" and "Would most other people describe you as overweight?"—were used (See Appendix B). Only participants who answered "yes" to either of these questions were allowed to participate in this study once these restriction questions were employed.

This study was reviewed and approved by the Research Ethics Board (REB) at the University of Windsor (REB #10-254).

## Measures

**Demographic characteristics**. The Demographic Questionnaire was used to obtain details about participant age, ethnicity, self-reported height and weight, year of study, living arrangements, parents' marital status, psychiatric history, sexual orientation, relationship status, and relationship duration. Participants were asked a question about their weight at relationship initiation, as well as a number of other questions about their romantic partnership (e.g. "Are you involved in a long distance relationship?"). The Demographic Questionnaire is included in Appendix C.

**Weight status**. Body mass index (BMI), also known as Quetelet's index (Garrow & Webster, 1985), is commonly used to determine whether individuals have an underweight, normal weight, overweight, or obese body weight status. BMI is calculated as weight in kilograms divided by square height in metres. The use of BMI as a measure of weight status has some shortcomings. Notably, its calculation is dependent only upon weight and height, and does not account for muscle or bone mass. As a result, BMI may at times be misleading; for example, a muscular athlete who has little body fat may have a high BMI, although they may be of a healthy body weight. In order to address this shortcoming, a screening question was included to ensure that high-level athletes—who are likely to have a higher than average muscle mass—were not included in the study (see Appendix B).

In the current study, height and weight were both (a) self-reported and (b) measured objectively. Self-reported BMI was computed based on participants' height and weight, as reported on the demographic questionnaire. Objective BMI was computed based on height and weight measurements obtained by a research assistant.

**Self-esteem**. The 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is commonly used to measure global self-esteem. Items assess participants' general feelings about themselves on a 4-point Likert scale (1 = *strongly agree* to 4 = *strongly disagree*). A sample item is, "I am able to do things as well as most other people".

The RSE has demonstrated adequate to high internal consistency, with investigators reporting alpha coefficient values ranging from .72 to .88 (Fleming & Courtney, 1984; Ward 1977). In the current study, internal consistency of the RSE was .70. Fleming and Courtney (1984) have also reported a test-retest reliability coefficient of .82 over a one-week period.

**Social desirability**. The Marlowe-Crowne Social Desirability Scale, Short Form C (M-C Form C; Crowne & Marlowe, 1960; Reynolds, 1982) is a 13-item scale that measures participants' tendency to respond in socially or culturally sanctioned ways. This scale has a true or false format, and a sample item is, "I sometimes feel resentful when I don't get my way".

The M-C Form C correlates highly ($r$ = .93) with the standard 33-item version of the scale (Reynolds, 1982). Previous researchers have reported internal consistency coefficients for the standard scale and its short form as .88 and .76, respectively (Crowne & Marlowe, 1960; Reynolds, 1982). In the current study, internal consistency of the M-C Form C was .84. The one-month test-retest coefficient of the standard Marlowe-Crowne is .89 (Crowne & Marlowe, 1960), and the six-week test-retest coefficient of the M-C Form C is .74 (Zook & Sipps, 1985).

**Eating attitudes**. The EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) is an abbreviated version of the original 40-item Eating Attitudes Test (Garner & Garfinkel,

1979), and measures maladaptive eating attitudes and behaviours. It is commonly used as a screening instrument in order to identify eating disturbances in non-clinical samples. Questions related to eating patterns are measured on a 6-point Likert scale (0 = *never* to 5 = *always*) with higher scores indicating greater eating disturbances. A cutoff score of 20 is typically used to identify those with eating pathology.

The EAT-26 correlates highly ($r$ = .98) with the original instrument, and has demonstrated good to excellent reliability among both anorexic and non-clinical samples (Banasiak, Wertheim, Koerner, & Voudouris, 2001; Cash, Phillips, Santos, & Hrabosky, 2004c; Cash, Santos, & Williams, 2005; Garner, Olmsted, Bohr, & Garfinkel, 1982; Giovannelli, Cash, Jenson, & Engle, 2008). In the current study, internal consistency of the EAT-26 was .83. Banasiak and colleagues (2001) report a test-retest reliability of .89 over a four to five week period.

**Romantic relationship quality**. The 32-item Dyadic Adjustment Scale (DAS; Spanier, 1976) is widely used to measure the quality of marital relationships or similar dyads. The format for rating items varies; whereas some items are rated on 6-point Likert scales, others are rated on 4-point scales, and some require Yes/No ratings. The total DAS score is obtained by summing all items. For items with a dichotomous response format, "No" responses receive a score of 1 and "Yes" responses receive a score of 0. Higher DAS scores reflect better relationship quality. The DAS contains four subscales: Dyadic Satisfaction, Dyadic Cohesion, Dyadic Consensus, and Affectional Expression. The Dyadic Satisfaction subscale measures the amount of tension in the relationship, as well as the extent to which an individual has considered ending it [10 items; e.g., "How often do you discuss or have you considered divorce, separation, or terminating your

relationship?" (1 = *all the time* to 6 = *never)*]. The Dyadic Cohesion subscale assesses the common interests and activities shared by the couple [5 items; e.g., "Do you and your mate engage in outside interests together?" (0 = *none of them* to 4 = *all of them*)]. The Dyadic Consensus subscale (13 items) asks participants to indicate the extent of agreement between partners on matters of importance to the relationship. Examples of items on this subscale include "handling family finances" and "religious matters" (1 = *always agree* to 6 = *always disagree*). The Affectional Expression subscale (4 items) measures an individual's satisfaction in the expression of affection and sex in the relationship. For example, items on this subscale ask participants whether "not showing love" or "being too tired for sex" caused differences of opinions or problems in their relationship during the past few weeks (*yes*/*no*).

In Spanier's original sample (1976), internal consistency of the DAS total score was excellent ($\alpha$ = .96). He reported alpha coefficients for the Satisfaction, Consensus, Cohesion, and Affectional Expression subscales of .94, .90, .86, and .73, respectively. Others have found the Affectional Expression subscale to demonstrate poor internal consistency, with some researchers reporting alpha coefficient values as low as .53 (Antill & Cotton, 1982; Lim & Ivey, 2000). In the current study, the alpha coefficients for the Consensus and Cohesion subscales were acceptable, at .85 and .72 respectively. However, the Affectional Expression subscale had questionable internal consistency ($\alpha$ = .65) and the internal consistency of the Satisfaction subscale was even worse ($\alpha$ = .50). Only the DAS total score, which demonstrated very good internal consistency ($\alpha$ = .89), was used in the current study.

Factor analysis supports the construct validity of the DAS, indicating that it measures four distinct factors, which load reliably onto a higher second-order factor reflecting overall relationship quality (Spanier, 1976). Scores on each item are able to differentiate between married and divorced samples, supporting the criterion-related validity of the measure. The DAS also demonstrates good concurrent validity with the Locke-Wallace Marital Adjustment Scale (Lim & Ivey, 2000; Spanier, 1976) and the Marital Disaffection Scale (Lim & Ivey, 2000).

Despite the aforementioned criticisms of the DAS, it remains the most widely used measure of relationship quality. Therefore use of the DAS in the current study will provide a link to previous studies. Another measure of relationship quality was also used in order to address criticisms of DAS.

The 18-item Perceived Relationship Quality Components Inventory (PRQC Inventory; Fletcher et al., 2000b) assesses six dimensions of perceived romantic relationship quality that correspond to the PRQC Inventory's six subscales: Satisfaction, Commitment, Intimacy, Trust, Passion, and Love. Each subscale contains three items that were designed to have high face validity. For example, the three questions used to assess levels of intimacy within a relationship are, "How intimate is your relationship?", "How close is your relationship?", and "How connected are you to your partner?" Participants respond to items on a 7-point Likert scale (1 = *not at all* to 7 = *extremely*) with higher scores reflecting higher perceived relationship quality.

In the current study, the alpha coefficient for the PRQC total score was .94, which is consistent with the coefficient values that have been reported in various studies (Boyes & Latner, 2009; Campbell, 2005; Kearns & Fincham, 2005). In their original sample,

Fletcher and colleagues (2000a) reported that internal consistency for the six subscales ranged from .74 to .96. Similar values were found in the current study, with internal consistency values ranging from .80 to .96. Fletcher et al. (2000a) reported one-month test-retest reliability coefficients of .78 to .96 among the subscales. They also conducted a confirmatory factor analysis that supports the construct validity of the PRQC Inventory. This analysis revealed that the measure contains six semi-independent factors, which load onto one second-order factor reflecting global perceived relationship quality.

**Body image evaluation**. The Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990) is a widely used measure that assesses self-attitudinal aspects of body image. In the current study, only the five MBSRQ Appearance Subscales (MBSRQ-AS; 34 items) were administered. The Appearance Evaluation subscale (7 items) measures feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. A sample item is, "I like my looks just the way they are" (1 = *definitely disagree* to 5 = *definitely agree*); higher scores reflect more positive or satisfied feelings about personal appearance. The Appearance Orientation subscale (12 items) measures the degree of cognitive and behavioural investment in one's physical appearance. A sample item is, "Before going out in public, I always notice how I look" (1 = *definitely disagree* to 5 = *definitely agree*); higher scores reflect greater importance and attention to appearance. The Overweight Preoccupation subscale (4 items) measures fat anxiety, weight vigilance, dieting, and eating restraint. A sample item is, "I have tried to lose weight by fasting or going on crash diets" (1 = *never* to 5 = *very often*); higher scores reflect greater concern with one's weight. The Self-Classified Weight subscale (2 items) measures how one perceives and

labels one's weight. A sample item is, "From looking at me, most other people would think I am ____" (1 = *very underweight* to 5 = *very overweight*). Finally, the Body Areas Satisfaction Scale (BASS) subscale (9 items) measures satisfaction with specific aspects of appearance (e.g., hair, lower torso, weight; 1 = *very dissatisfied* to 5 = *very satisfied*); higher scores on the BASS reflect greater body satisfaction.

In the original sample, alpha coefficients of the five MBSRQ-AS subscales ranged from .70 to .91. All five subscales also demonstrated acceptable internal consistency in the current sample, with alpha coefficients ranging from .74 to .89. Cash (2000) reported that the one-month test-retest reliability of the subscales ranged from .71 to .94 (Cash, 2000). The BASS, Appearance Evaluation, and Appearance Orientation subscales have demonstrated convergent validity with the Appearance Schemas Inventory (Cash & Labarge, 1996), and cognitive behavioural interventions targeting body image dissatisfaction have been shown to lower scores on the Appearance Evaluation, Appearance Orientation, and Overweight Preoccupation Subscales (Cash & Lavallee, 1997).

In the current study, only the Appearance Evaluation and Body Areas Satisfaction subscales—both of which are measures of body image evaluation—were included in the analyses.

**Body image investment.** The Appearance Schemas Inventory-Revised (ASI-R; Cash, Melnyk, & Hrabosky, 2004b) is a 20-item measure that is designed to assess the nature and degree of psychological investment in one's physical appearance. Items are rated on a 5-point scale (1= *strongly disagree* to 5 = *strongly agree*) with higher scores indicating greater investment. The ASI-R contains two subscales. The 12-item Self-

Evaluative Salience (SES) subscale measures individuals' beliefs about how their looks influence their personal or social worth and sense of self. A sample item from this subscale is "What I look like is an important part of who I am". The 8-item Motivational Salience (MS) subscale measures the extent to which individuals attend to their appearance and engage in appearance-management behaviours. A sample item from this subscale is "Before going out, I make sure that I look as good as I possibly can. Self-Evaluative Salience is thought to represent a more dysfunctional type of appearance investment than Motivational Salience, which is not necessarily maladaptive.

Cash et al. (2004a) found internal consistency of the ASI-R to be good to excellent among a sample of women. They reported values of .88, .82, and .90, for the ASI-R total score, SES subscale, and MS subscale, respectively. Internal consistency of the measure was highly similar in the current study with alpha coefficients of .88, .84, and .84 for the ASI-R total score, SES subscale, and MS subscale, respectively. Investigators have reported two-week test-retest reliabilities for the SES and MS subscales of .88 and .78, respectively (Cash & Grasso, 2005).

Factor analytic research has confirmed the two-factor structure of the ASI-R supporting the construct validity of the measure (Cash et al., 2004a; Rusticus & Hubley, 2005). Consistent with the literature, women report significantly higher levels of schematic investment than men, as measured by the composite ASI-R score. Women also report greater self-evaluative and motivational investment than men; this gender discrepancy is more pronounced for self-evaluative investment (Cash & Grasso, 2005; Cash et al., 2004a). Cash and colleagues (2004a) found a small correlation between

women's BMI and their Self-Evaluative Salience scores; however, women's BMI was unrelated to their Motivational Salience and composite ASI-R scores.

The ASI-R correlates with several other measures of the cognitive, affective, and behavioural elements of body image, demonstrating the convergent validity of the measure. In particular, the ASI-R composite and SES subscale scores are positively associated with measures of self-ideal discrepancies, internalization of appearance-related media ideals, dysphoric body image emotions, and cognitive-behavioural investment in one's appearance (Cash et al., 2004a; Rusticus & Hubley, 2005).

In the current study, only the SES subscale, measuring dysfunctional body image investment, was used in the analyses.

**Procedure**

The current study was reviewed and approved by the Research Ethics Board at the University of Windsor. Participants were recruited during the Winter 2011 school term. Upon arrival to the testing session, participants were assigned a research identification number and written informed consent was obtained (see Appendix D). Participants completed a questionnaire package containing the above measures in small groups supervised by a research assistant. With the exception of the demographic questionnaire, measures were administered in counterbalanced order to control for possible order effects. The demographic questionnaire was administered at the end of the study since it contained items that may have hinted at the research questions (e.g. "How frequently does your partner make negative comments about your body weight or shape?") and might have otherwise influenced how participants completed other measures. After

completing the questionnaire package, participants had their height and weight measured by a researcher assistant. This final stage of the procedure took place individually and in a separate room. The entire study lasted approximately 30 to 45 minutes. Students received one course credit for their participation, which could be applied to their final grade in any eligible psychology course.

## Results

### Overview and Sequence of Analyses

Prior to conducting analyses, the integrity of the data set was assessed. Problems related to missing data, outliers, and influential observations were addressed. Statistical assumptions were verified. Internal consistencies were calculated for all measures.

Analyses were conducted using SPSS 19.0. A hierarchical multiple regression analysis (MRA) was conducted in order to test the two primary hypotheses. Six exploratory, backwards entry multiple regression analyses were also conducted. A one-way independent samples analysis of variance (ANOVA) was used to compare the effect of BMI category on overall relationship quality. A Wilcoxon signed-rank test assessed differences between self-reported and objectively measured BMI. Finally, a Mann-Whitney *U* test investigated weight and BMI differences among participants who did and did not self-report their weight on the demographic questionnaire.

### Data Management

**Treatment of missing data**. A missing value analysis and close inspection of the data revealed that nearly all study variables had fewer than 5% of their values missing.

However, 10.1% of cases were missing for self-reported weight. This likely occurred due to the sensitive nature of disclosing one's body weight combined with the fact that some respondents were genuinely unable to report their weight accurately. The question of whether participants who did not report their weight had a higher measured BMI or weight than those who reported their weight was explored below.

Also, 10.8% of the sample had missing values for item 31 on the Dyadic Adjustment Scale. This item asks participants to rate their degree of relationship happiness on a Likert-type scale ranging from extremely unhappy to perfect. However, inspection of the data suggests that the question as presented in the questionnaire may have confused some respondents; that is, participants may not have recognized the item as a separate question and thus did not respond. There was also an inadvertent typing error on the same item of the DAS. Specifically, the response option "Extremely unhappy" was incorrectly written as "Extremely happy"; thus "Extremely happy" appeared twice on the rating scale. Participant responses to this item were examined in relation to their general pattern of responding on the two relationship measures (i.e. the DAS and PRQC Inventory). To address the potential for biased responses for this item, analyses that involved this item were conducted twice—once including and once excluding item 31 of the DAS. The pattern of results from the analysis excluding this item did not meaningfully differ from the analysis in which they were included.

Two other variables on the Dyadic Adjustment Scale (item 1, "handling family finances" and item 13, "household tasks") were missing in 5.8% and 5.0% of cases, respectively. For these items, participants were asked to indicate their degree of agreement or disagreement with their partners. Given the relatively young age of

participants in the current sample (*M*= 20.69 years, *SD* = 1.86) and the fact that only 11.5% of participants reported living with their romantic partner, these questions were likely seen as not applicable by some participants.

Little's MCAR test was significant ($p = 1.00$), confirming that missing values were not missing completely at random (MCAR). When data is not MCAR, listwise, pairwise, mean substitution, and regression estimation methods of imputation can lead to biased estimates of correlations and covariances; thus the expectation-maximization (EM) estimation method should be used (SPSS Missing Value Analysis, 2007). The EM method depends on the assumption that the probability of missing a value on a variable is not related to the missing value itself but may be related to other completely observed variables in the data set. This condition is called missing at random (MAR). The EM method assumes a distribution for partially missing data based on the observed values and current estimates of the parameters, and bases inferences on the likelihood under that distribution. Through an iterative process, EM estimates the means, covariance matrix, and correlations of quantitative variables with missing values (SPSS Missing Value Analysis, 2007). All missing values in the data set were imputed using EM, except for variables measured on the demographic questionnaire.

**Treatment of outliers and influential observations**. The data was searched for univariate outliers by examining standardized scores (*z*-scores) on all of the variables included in the analyses. A cut-off score of ± 3.3 was used to identify the outliers. These outliers were then replaced with a score derived by multiplying the *z*-score by the standard deviation, and then adding the mean. This method, recommended by Field (2009), reduces the impact of outlying cases.

For the multiple regression analyses, multivariate outliers were detected by examining the standardized residuals, Mahalanobis Distance values (where $\propto$ is set at .001), and Leverage values, using a cut-off score of $3[(k+1)]/N$, as recommended by Stevens (2002). Influential observations were identified as those with Cook's Distance values greater than 1 and Standardized DFFIT values greater than the absolute value of 2. Multivariate outliers and influential observations were excluded from the analyses.

**Internal consistency of measures**. Cronbach's alpha coefficients were used as a measure of internal consistency. These were calculated for all measures used in the current study. George and Mallery (2003) provide the following guidelines for alpha coefficient values: reliability > .9 is excellent, > .8 is good, > .7 is acceptable, > .6 is questionable, > .5 is poor, and < .5 is unacceptable. Only total and subscales scores that had alpha coefficient values of greater than .70 were used in the following analyses.

**Calculation of composite variables**. Body image evaluation and romantic relationship quality were assessed through the use of multiple measures in order to overcome the limitations of any one measure. Composite variables were formed based on theoretical and statistical grounds.

The total scores for the PRQC Inventory and the DAS had a high amount of shared variance ($R^2$ = .62). These measures also had a Cronbach's alpha value of .88, providing further evidence that they measure the same construct. The two scores were therefore combined into a composite measure of overall romantic relationship quality by calculating the average normalized *z*-scores across the two scales. Higher scores indicate higher quality relationships.

Similarly, the MBSRQ Appearance Evaluation and Body Areas Satisfaction Subscales had a high amount of shared variance ($R^2$ = .63) and were internally consistent (Cronbach's $\alpha$ = .89). According to the MBSRQ test author, these two subscales can be combined as both measure body image satisfaction/dissatisfaction (Cash, 2000). The two scores were therefore combined into a composite measure of body image evaluation by calculating the average of the normalized *z*-scores for the two scales. Higher scores indicate greater body image satisfaction.

**Descriptive Data**

Means and standard deviations were calculated for all major study variables assessed by means of ordinal or ratio scales. This data is presented in Table 1. Frequencies were calculated for all categorical variables.

**Bivariate correlations.** Pearson product-moment correlations between pairs of variables are reported in Table 2; values for two-tailed tests of significance are reported. The most notable findings are presented below.

Unsurprisingly, objective and subjective BMI were very strongly correlated ($r$ = .96, $p$ = .000). There was a moderate to strong correlation between body image evaluation and dysfunctional body image investment ($r$ = -.39, $p$ = .000). As expected, objective BMI and body image evaluation were strongly correlated ($r$ = -.48, $p$ = .000); participants with higher BMIs were more likely to report body dissatisfaction. However, objective BMI was unrelated to dysfunctional body image investment ($r$ = .12, $p$ =.155). Contrary to expectations, there was no significant correlation between objective BMI and self-esteem ($r$ = -.10, $p$ = .234).

Analyses indicated moderate to large correlations between overall romantic relationship quality and self-esteem ($r = .39, p = .000$), body image evaluation ($r = .41, p = .000$), and dysfunctional body image investment ($r = -.28, p = .001$). However, romantic relationship quality was unrelated to objective BMI ($r = -.11, p = .235$), relationship duration ($r = .06, p = .521$), and social desirability ($r = .14, p = 110$).

There was a small positive correlation between age and objective BMI ($r = .17, p = .046$). Age was also, unexpectedly, correlated with overall romantic relationship quality ($r = -.24, p = .005$), and was therefore included as a covariate in the regression analyses. Eating pathology was correlated with objective BMI ($r = .39, p = .000$), body image evaluation ($r = -.52, p = .000$), dysfunctional body image investment ($r = .34, p = .000$), and relationship quality ($r = -.23, p = .007$), and consequently was also included as a covariate in regression analyses. Self-esteem strongly was correlated with body image evaluation ($r = .62, p = .000$), dysfunctional body image investment ($r = -.48, p = .000$), and overall romantic relationship quality ($r = .39, p = .000$). For these reasons, self-esteem was included as a third covariate in the regression analyses.

Point-biserial correlation analyses were also conducted to examine the association between weight at relationship initiation and overall romantic relationship quality. Weight gain over the course of a romantic relationship was not significantly correlated with overall romantic relationship quality ($r = .012, p = .899$) and only marginally correlated with objective BMI ($r = -.18, p = .056$). Weight loss only marginally correlated with overall romantic relationship quality ($r = -.19, p = .07$) and was unrelated to objective BMI ($r = .006, p = .956$). Given that only a rough and retrospective measure of

weight at relationship initiation was used, and because it did not significantly correlate with relationship quality, it was not included as a control variable in the primary analysis.

**Primary Analysis Predicting Overall Romantic Relationship Quality**

**Statistical assumptions**. In order for a multiple regression analysis to have sufficient power, there must be a minimum of 15 observations per variable (Field, 2009). Because there were seven predictor variables in the primary regression analysis, a minimum of 105 observations were required. This assumption was met as 137 participants remained in the data set for analysis after the removal of multivariate outliers and influential observations.

Collinearity diagnostics were inspected in order to ensure that there were no issues around multicollinearity and/or singularity. All VIF values were below 10 and tolerance values were greater than .01. None of the correlations among predictor variables exceeded .90.

The residual scatterplot was inspected in order to check for the assumptions of linearity and homoscedasticity. The data points were evenly dispersed across the range of predicted values and the graph revealed a linear pattern, indicating that these assumptions were met.

Normality was assessed by examining histograms and P-P plots of the residuals. These graphs indicated moderate deviations from normality, with the histogram revealing a negative skew. However, the skewness (-.69) and kurtosis (.73) values for the standardized residuals were both within acceptable ranges—i.e. less than +/- 1 *SD* from the mean of 0 (Bulmer, 1979). Multiple regression analysis is also conditionally robust to

slight deviations from non-normality. Given this and the caveats associated with transformations, a decision was made to not transform the data.

The Durbin Watson statistic was 2.27, indicating that the residuals were independent and uncorrelated with predictor variables.

The final MRA assumption is that predictor variables were measured without error. As detailed above, a research assistant took participants' height and weight measurements in order to ensure accurate measurement of participant BMI. All other predictor variables had acceptable to excellent reliability.

**Hypothesis testing.** The two *a priori* hypotheses were investigated using one hierarchical multiple regression equation. Because scores were standardized in order to form the body image evaluation and overall romantic relationship quality composites, all other variables were converted to standardized scores prior to being entered into the analyses. Three control variables, self-esteem, eating pathology, and age were entered first into the equation because they correlated significantly with objective BMI, body image evaluation, dysfunctional body image investment, and/or overall romantic relationship quality. The initial plan was to statistically control for relationship duration and social desirability given their theoretical links to relationship quality. However, neither variable correlated with overall relationship quality, and regression analyses that included these variables as predictors indicated that they did not add to the variance explained in the outcome. As a result, relationship duration and social desirability were not included in the model. In the second step, dysfunctional body image investment, objective BMI, the body image evaluation composite, and the interaction between objective BMI and the body image evaluation composite were entered into the equation.

The first step of the regression was significant and accounted for 24.9% of the variance, Adj $R^2 = .23$, $F(3, 133) = 14.68$, $p = .000$, $f^2 = .33$. The second step accounted for an additional 5.8% of the variance in relationship quality, $R^2 = .31$, Adj $R^2 = .27$, $F(7,129) = 8.14$, $p = .000$, $f^2 = .44$. The second step made a significant contribution to the model, $F_{change}(4, 129) = 2.68$, $p = .035$, $f^2 = .08$. Self-esteem, age, and body image evaluation significantly predicted overall romantic relationship quality. There was no significant main effect of eating pathology, dysfunctional body image investment, or objective BMI, nor was there a significant interaction effect. Table 3 contains the unstandardized coefficients, standard error of the b-values, and standardized beta values. The unstandardized coefficients, rather than the standardized beta values should be interpreted because all variables were already standardized prior to conducting the analyses.

**Exploratory Analyses Predicting Specific Relationship Quality Components**

Six exploratory backwards elimination MRAs were performed. The dependent variables were the six PRQC Inventory subscales, i.e. Satisfaction, Commitment, Intimacy, Trust, Passion, and Love. Independent variables entered into all models were age, relationship duration, self-esteem, eating pathology, social desirability, objective BMI, dysfunctional body image investment, the body image evaluation composite, and the objective BMI by body image evaluation interaction. These predictor variables were selected on theoretical and statistical grounds. Criteria for removal from the model was $p > .10$.

Visual inspection of histograms as well as skewness and kurtosis values indicated

that that all six dependent variables significantly differed from the normal distribution. In order to correct for the non-normality, a log transformation was applied to all variables involved in the analysis. Each variable was subsequently standardized before being entered into the regression equation. All other statistical assumptions were met.

Although conducting several regression analyses increases the familywise Type I error rate, using a more stringent alpha level (e.g. $\alpha = .01$) reduces power and increases the risk of Type II errors. Therefore, findings were interpreted at the standard .05 level.

**Predictors of satisfaction.** The first exploratory analysis was conducted in order to investigate predictors of relationship satisfaction. In the first step, all variables were entered into the model. Relationship duration was removed in the second step, social desirability was removed in the third step, eating pathology was removed in the fourth step, the objective BMI by body image evaluation interaction was removed in the fifth step, and self-esteem was removed in the sixth step. The final model, provided in Table 4, included age and body image evaluation as significant predictors of relationship satisfaction, $R^2 = .21$, Adj $R^2 = .19$, $F\ (4, 130) = 8.74$, $p = .000$, $f^2 = .27$.

**Predictors of commitment.** The second exploratory analysis was conducted to determine potential predictors of commitment in a romantic relationship. After all variables were initially entered into the model, objective BMI was removed in the second step, eating pathology was removed in the third step, age was removed in the fourth step, dysfunctional body image investment was removed in the fifth step, body image evaluation was removed in the sixth step, social desirability was removed in the seventh step, the objective BMI by body image evaluation interaction was removed in the eighth step, and relationship duration was removed in the ninth step. Only self-esteem emerged

as a significant predictor of commitment, $R^2 = .06$, Adj $R^2 = .05$, $F(1, 137) = 8.75$, $p = .004$, $f^2 = .06$. The final model is provided in Table 5.

**Predictors of intimacy.** The third exploratory analysis was conducted to determine potential predictors of intimacy in a romantic relationship. After all variables were initially entered into the model, social desirability was removed in the second step, eating pathology was removed in the third step, objective BMI was removed in the fourth step, the objective BMI by body image evaluation interaction was removed in the fifth step, and self-esteem was removed in the sixth step. The final model, provided in Table 6, accounted for 19.3% of the variance in intimacy, Adj $R^2 = .17$, $F(4, 131) = 7.82$, $p = .000$, $f^2 = .20$. Age and dysfunctional body image investment emerged as significant predictors of relationship intimacy.

**Predictors of trust.** The fourth exploratory analysis was conducted to determine potential predictors of trust in a romantic relationship. After all variables were initially entered into the model, eating pathology was removed in the second step, relationship duration was removed in the third step, objective BMI was removed in the fourth step, the objective BMI by body image evaluation interaction was removed in the fifth step, social desirability was removed in the sixth step, and self-esteem was removed in the seventh step. The final model, provided in Table 7, accounted for 13.6% of the variance in trust, Adj $R^2 = .12$, $F(3, 129) = 6.76$, $p = .000$, $f^2 = .16$. Dysfunctional body image investment and body image evaluation emerged as significant predictors of trust.

**Predictors of passion.** Next, potential predictors of passion in romantic relationships were explored. After all variables were initially entered into the model, dysfunctional body image investment was removed in the second step, the objective BMI

by body image evaluation interaction was removed in the third step, social desirability was removed in the fourth step, eating pathology was removed in the fifth step, body image evaluation was removed in the sixth step, and relationship duration was removed in the seventh step. In the final model, self-esteem and objective BMI significantly predicted passion. This model, presented in Table 8, accounted for 12.7% of the variance in the outcome, Adj $R^2 = .11$, $F(2, 128) = 6.19$, $p = .001$, $f^2 = .15$.

**Predictors of love.** In the final regression analysis, predictors of romantic love were explored. After all variables were initially entered into the model, the objective BMI by body image evaluation interaction was removed in the second step, social desirability was removed in the third step, objective BMI was removed in the fourth step, eating pathology was removed in the fifth step, self-esteem was removed in the sixth step, dysfunctional body image investment was removed in the seventh step, age was removed in the eighth step, and relationship duration was removed in the ninth step. Interestingly, only body image evaluation significantly predicted romantic love. The final model, presented in Table 9, accounted for 9.8% of the variance in the outcome, Adj $R^2 = .09$, $F(1, 133) = 14.53$, $p = .000$, $f^2 = .11$.

## Ancillary Analyses

**BMI category as a predictor of overall romantic relationship quality.** In the primary analysis (i.e. the hierarchical MRA), BMI did not predict overall romantic relationship quality. A one-way independent samples ANOVA was conducted in order to see whether results would differ if BMI was operationalized as a categorical rather than a continuous variable. Using objectively measured BMI, participants were categorized as

either underweight, normal weight, overweight, or obese according to the BMI categories established by the WHO (2000) and Health Canada (2003). An ANOVA was then performed to assess whether significant differences existed between these four groups on overall romantic relationship quality.

For each group, the distribution of the dependent variable approximated normality. Because the homogeneity of variance assumption was violated, as indicated by a significant Levene's test, the Welch *F*-ratio, which is a robust test of equality of means, is reported. There was no significant effect of objective BMI category on overall romantic relationship quality, $F(3, 24.78) = .786$, $p = .513$, $\eta^2 = .03$.

The overall pattern of results did not differ in any meaningful way when the overweight and obese participants were collapsed into one group. These findings replicated those of the primary regression analysis—that is, BMI did not predict overall romantic relationship quality, whether it was operationalized as a continuous or categorical variable.

**Comparing self-reported and objectively obtained measurements.** Three analyses compared the difference between self-reported and actual BMI, weight, and height. It was expected that participants' self-reported BMI would be lower than their objectively assessed BMI.

Because all three difference scores significantly differed from the normal distribution, a Wilcoxon signed-rank test was performed. This analysis is the non-parametric equivalent of the paired samples *t*-test; it is used in situations in which two sets of scores coming from the same participants are compared. The statistical assumptions of this analysis were met.

125 cases were included in the BMI comparison. Participants' actual BMI (*Mdn* = 23.17 kg/m$^2$) was significantly higher than their self-reported BMI (*Mdn* = 22.81 kg kg/m$^2$), $z = -3.44$, $p = .001$ (1-tailed), $r = -.31$.

133 cases were included in the height comparison. Participant's actual height (*Mdn* = 1.63 m) was significantly lower than their self-reported height (*Mdn* = 1.65 m), $z = -4.00$, $p = .000$ (2-tailed), $r = -.35$.

125 cases were included in the weight comparison. Participants' actual weight (*Mdn* = 62.00 kg) did not significantly differ from their self-reported weight (*Mdn* = 61.23 kg), $z = -1.21$, $p = .276$ (2-tailed), $r = -.11$.

**Comparing participants who did and did not self-report their weight**. 10.1% of participants did not indicate their weight on the demographic questionnaire. Accordingly, two analyses compared objectively measured weight and objectively measured BMI among participants who reported their weight ($n = 125$) and those who did not ($n = 14$). Because the dependent variables were positively skewed, Mann-Whitney *U* tests were conducted. This analysis is the non-parametric equivalent of the independent samples *t*-test. It was expected that participants who did not self-report their weight would be heavier and have a higher BMI.

Participants who failed to self-report their weight (*Mdn* = 72.15 kg) had a higher objective weight than those who self-reported their weight (*Mdn* = 61.80 kg); however, this difference was only marginally significant, $U = 646.00$, $p = .055$ (1-tailed), $r = .14$.

Participants who failed to self-report their weight (*Mdn* = 25.26 kg/m$^2$) also had a higher objective BMI than those who self-reported their weight (*Mdn* = 23.08 kg/m$^2$);

however, again, this difference was only marginally significant, $U = 660.00$, $p = .066$ (1-tailed), $r = .13$.

As a reminder to the reader, Table 10 summarizes the major findings of the primary and exploratory analyses.

## Discussion

### Correlations Among Major Study Variables

As has been consistently demonstrated through previous research, there was a strong negative correlation between objectively assessed BMI and body image evaluation, such that participants with higher BMIs, reported greater body dissatisfaction. The medium to large effect size found in the current study ($r = -.48$) is comparable to the values reported by other researchers (e.g. Markey & Markey, 2006, $r = -.50$).

Although BMI correlated with body image evaluation, it was unrelated to dysfunctional body image investment. This finding stands in contrast to that of Cash and colleagues (2004b) who reported that overweight women were slightly more likely to have a dysfunctional body image investment. Despite this discrepancy, the current findings support a general pattern wherein BMI is strongly tied to body image evaluation, but weakly related or unrelated to dysfunctional body image investment.

The two dimensions of body image that were measured—evaluation and investment—were moderately to strongly associated. That is, participants who reported greater body dissatisfaction were also more likely to base their self-worth on their physical appearance. At the same time, body image evaluation and investment had only 15% shared variance, thereby demonstrating discriminant validity of these constructs, and

providing support for the conceptualization of body image as a multidimensional construct.

Objectively measured BMI was unrelated to self-esteem. This finding was surprising given Miller and Downey's (1999) meta-analytic finding that higher BMIs are associated with lower self-esteem. These researchers reported a small to moderate effect size, but also noted that effect sizes were much larger among studies that used self-reported rather than actual BMI. Given that many studies do, in fact, rely on self-reported BMI, it may be that these studies are overestimating the extent of the association between BMI and self-esteem. In the current research, however, the relationship between self-esteem and BMI changed very little whether the latter was self-reported or objectively assessed.

**Predictors of Overall Romantic Relationship Quality**

The first hypothesis was supported. There was a moderate to strong association between body image evaluation and overall romantic relationship quality, such that participants who were satisfied with their bodies reported significantly higher romantic relationship quality than did participants who were body dissatisfied. These findings support previous research linking body dissatisfaction to a variety of relationship functioning indicators, such as sexual functioning (Ambwani & Strauss, 2007; Cash et al., 2004a; Wiederman, 2002) and feelings of jealousy (Ambwani & Strauss, 2007). However, the current study is one of very few studies to examine the association between women's body image evaluation and global perceptions of romantic relationship quality.

The second hypothesis was not supported. Contrary to expectations, the interaction between objective BMI and body image evaluation did not predict overall romantic relationship quality. That is, although body dissatisfaction predicted romantic relationship quality, its effect was not more pronounced among overweight and obese women. Thus, it appears that the lack of consensus among past studies regarding the association between BMI and relationship quality cannot be explained by the failure to account for body dissatisfaction.

No specific hypothesis was made regarding the link between women's BMI and overall romantic relationship quality. However, a primary goal of the study was to clarify the association between these two variables. In the current study, BMI did not predict global evaluations of relationship quality, whether it was operationalized continuously or categorically. Therefore, while a body of research indicates that overweight and obese females have difficulty initiating romantic relationships, the current findings suggest that BMI does not affect the overall quality of ongoing romantic relationships. These findings are consistent with research on married samples conducted by Carr and Friedman (2006) and Sobal and colleagues (1995). However, they do not support the findings reported by Markey and colleagues (2001) or Boyes and Latner (2009), who found negative associations between women's BMI and the overall quality of their romantic relationships.

As previously outlined, the study of body image investment is relatively sparse, and therefore little research exists on how this variable might relate to relationship success or failure. Accordingly, another goal of this research was to investigate whether a maladaptive investment in one's appearance was related to romantic relationship quality.

Although there was a moderate, negative association between the two, dysfunctional body image investment did not significantly predict overall romantic relationship quality in a regression analysis. These results demonstrate the importance of studying different domains of the body image construct; while body image evaluation and investment are related, they are ultimately distinct concepts that are associated with different outcomes. Although body dissatisfaction negatively impacts perceived romantic relationship quality, basing one's self-worth on one's appearance does not.

It was essential to statistically control for self-esteem given its strong association with both body image variables and given that self-esteem significantly predicted overall romantic relationship quality. In fact, self-esteem is known to be related to a variety of relationship factors, including perceived relationship satisfaction and closeness (Hendricks, 1988; Murray et al., 2002). Despite this, a common oversight in this area of study is the failure to control for self-esteem when assessing the impact of body image variables on relationship quality (e.g. Cash, et al., 2004a; Morrison et al., 2009). Results from the current study support those of Friedman and colleagues (1998), and indicate that body dissatisfaction accounts for significant variance in relationship quality, over and above what is accounted for by self-esteem. In fact, in the current study, self-esteem and body image evaluation had comparable effect sizes.

Overall romantic relationship quality and age shared a small to moderate association. Because age was not a variable of primary interest, it was included as a control variable in the regression analysis. Age emerged as a significant predictor of overall romantic relationship quality, such that younger participants reported higher quality partnerships. This result could not be accounted for by relationship duration,

which was unrelated to overall relationship quality. It is possible that the link between age and relationship quality is specific to this sample. The existing literature appears to be mixed on this issue, with some studies reporting negative associations between age and romantic relationship functioning (e.g. Brown & Booth, 1996; Zimmer-Gembeck & Petherick, 2006) and others finding no such association (e.g. Birnbaum, 2007; Frazier & Esterly, 1990; Kurdek & Schmitt, 1986).

**Predictors of the Specific Components of Relationship Quality**

In addition to predicting overall relationship quality, body image evaluation also predicted three specific relationship quality components: satisfaction, trust, and love. Participants who were satisfied with their bodies reported higher levels of satisfaction in their romantic partnerships. The size of this effect was quite strong, and indeed, this finding appears to be quite robust: the link between body image evaluation and relationship satisfaction has been replicated among dating and married samples and across cross-sectional and longitudinal studies (Friedman et al, 1999; Hoyt & Kogan, 2001; Morrison et al., 2009; Thelen et al., 1993). Women who were satisfied with their bodies also reported higher levels of trust in their partner. This finding supports existing research linking body dissatisfaction to jealousy, trust, and possessiveness within a romantic partnership (Ambwani & Strauss, 2007; Brennan & Shaver, 1995; Raciti & Hendrick; 1992). Finally, body image evaluation emerged as a strong predictor of love within a relationship. Interestingly, of all nine variables entered into the regression analysis, body image evaluation was the only one that was predictive of love. A negative

association between women's weight concerns (e.g. perceived fatness) and levels of love within marriage has previously been reported by Markey and colleagues (2001).

Although no specific hypotheses were made as to which variables might predict the six relationship quality components, one might expect that body dissatisfaction would be associated with lower levels of passion in a relationship. Numerous researchers have reported links between body dissatisfaction and poor sexual functioning, including decreased sexual desire, decreased enjoyment of sex, and an avoidance of sexual activities (Ambwani & Strauss, 2007; Cash et al., 2004a; Wiederman, 2002). It is surprising then, that in the current study, body image evaluation was not predictive of passion. A potential explanation for these seemingly discrepant findings is that, while body dissatisfaction is associated with decreased passion and poorer quality sexual experiences among women who are single or in casual dating relationships, passion may be unaffected by body dissatisfaction when women are in more committed relationships (i.e. those with a minimum relationship duration of three months).

Dysfunctional body image investment was not a significant predictor of overall romantic relationship quality; however, exploratory analyses revealed that it did impact some of the specific dimensions of relationship functioning. Firstly, dysfunctional body image investment negatively predicted intimacy, such that participants who defined their self worth by their physical appearance reported feeling less close and connected to their romantic partner. Cash and colleagues (2004d) have previously reported that women with body image dysfunction—including both body dissatisfaction and a dysfunctional investment in one's appearance—report greater fears of emotional intimacy in their romantic relationships. Secondly, participants in the current study who reported an

unhealthy investment in their body image also reported lower levels of trust in their relationships. Trust was the only relationship quality component that was related to both body image variables, suggesting a compelling link between body image attitudes and perceptions of the dependability or trustworthiness of one's romantic partner. The impact of body image evaluation on levels of trust was stronger than that of dysfunctional body image investment; however, to the researcher's knowledge, no existing studies have previously explored the association between body image investment and trust.

Although BMI was unrelated to global relationship quality, overweight and obese participants reported lower levels of passion within their romantic relationships. Passion was the only component of relationship quality that was related to BMI. The effect of BMI was quite strong, and had a greater impact on passion than did self-esteem. These results might be explained in the context of previous research indicating that overweight and obese females are perceived to be less likely to experience sexual desire, less sexually attractive, and less likely to have sexual experiences than normal weight women (Chen & Brown, 2005; Horsburgh-McLeod et al., 2009; Regan, 1996). It is also possible that heavy women have internalized the culturally pervasive weight stigma. That is, overweight and obese women may perceive themselves as sexually undesirable, and as a result, become less likely to initiate or engage in sexual activities with their partner. This latter explanation is less likely, however, as neither body image variable predicted levels of passion in a relationship. Furthermore, although one might speculate that the association between BMI and passion can be explained by poor self-esteem, in fact, self-esteem and BMI were unrelated.

The interaction between BMI and body image evaluation did not predict any of the six relationship quality components. Thus, the results of the exploratory analyses paralleled that of the primary analysis investigating overall relationship quality. Taken together, these results indicate that women who are both overweight and body dissatisfied do not have poorer quality romantic relationships than normal weight women who are body dissatisfied.

Although not of primary interest in the current study, it should be noted that age, which emerged as a significant predictor of overall romantic relationship quality, also predicted relationship satisfaction and intimacy. That is, younger participants reported being happier and more connected to their romantic partners than older participants. Self-esteem, which emerged as a strong predictor of overall relationship quality, also predicted commitment and passion. Individuals high in self-esteem were more committed to their partners and reported more passion in their relationships than individuals low in self-esteem. Interestingly, of all nine predictor variables investigated, only self-esteem significantly predicted commitment within a relationship.

**Comparison of Objectively Measured and Self-Reported BMI**

As expected, there was a very strong correlation between objectively measured and subjectively reported BMI ($r$ = .96). The strength of this effect is consistent with that reported by past researchers (e.g. Mendelson et al., 2000, $r$ = .93). Objective and self-reported BMI also had highly similar relationships to all major study variables.

However, statistical analyses revealed a significant difference between objectively assessed and subjectively reported BMI. Consistent with previous research, participants

had a tendency to overestimate their actual height, resulting in an underestimation of their actual BMI (Mendelson et al., 2000; Tienboon et al., 1992). In the current study, the average difference between actual and reported BMI was 0.3kg/$m^2$. Although this finding is significant and represents a moderate effect size, the difference is smaller than in many studies, where participants have been found to underreport their BMI by 1.00 to 1.20 kg/$m^2$ (Gorber et al., 2008; Mendelson, et al., 2000; Tienboon, et al., 1992). The smaller difference value found here is most likely due to the fact that, in contrast to previous studies, participants in the current sample were reasonably accurate reporters of their weight. Notably, participants were told that their height and weight measurements would be taken by a research assistant before reporting their measurements themselves. This may have unconsciously or consciously motivated them to be more accurate in their self-reports.

10% of participants did not report sufficient data in order to calculate subjective BMI: 14 participants failed to report their weight while six failed to report their height. Participants who did not self-report their BMI weighed more and had a higher actual BMI than those who self-reported their BMI, although it should be noted that these differences were small and marginally significant.

Taken together, these findings point to the importance of using objective BMI measurements. Researchers have a tendency to justify the use of self-reported BMI data based on correlations with objectively assessed BMI exceeding .90 (e.g. Pearce et al., 2002). The current research shows that these correlations may not tell the whole story. It is therefore crucial to use objective, non-biased BMI measurements, particularly when BMI is a major study variable. Where obtaining objective measurements of height and

weight is not feasible, Gorber and colleagues (2008) provide correction equations that more closely approximate objectively assessed BMI data.

**Importance of the Current Study**

The research literature indicates that high quality romantic relationships are associated with happiness and subjective well-being (Demir, 2008; Dush & Amato, 2005; Gove et al., 1983; Myers, 2000), whereas poor quality relationships increase the risk of physical illness (Wickrama et al., 1997) and psychological distress (Myers, 2000; Weissman, 1987). These findings suggest the need to gain a better understanding of the factors that contribute to relationship success or failure. The finding that body image dissatisfaction contributes to poorer overall relationship quality has important clinical implications. In individual or couples therapy, clients might benefit from efforts aimed at improving a female partner's body satisfaction. Such efforts will not only benefit the female partner, but could also improve the quality of the couples' relationship. Simple interventions, such as encouraging males to help foster a positive body image in their female partner, have the potential to be very effective. Importantly, the current study also makes it possible to identify the specific area of a relationship that might be negatively impacted by body image disturbance. Findings suggest that females with body image disturbances are more likely to experience lower levels of satisfaction, trust, intimacy, and love in their relationships. Couples suffering from these types of problems might benefit the most from targeted body image interventions.

Cognitive-behavioural therapy has been shown to be an empirically supported treatment for body image (Jarry & Ip, 2005). Given the demonstrated association between

relationship outcomes and body image difficulties in the current study, interpersonal therapy might also be effective as a primary or adjunctive therapy in the treatment of body image problems. Prior research has indicated that interpersonal therapy is, at least, equally effective as cognitive behavioural therapy in the treatment of eating disorders (Tantleff-Dunn & Gokee, 2002).

The current study contributes to the research base in several important ways. Firstly, use of a multidimensional instrument made it possible to obtain both global and specific evaluations of romantic relationships. This resulted in a more precise understanding of the impact of BMI and body image variables on relationship quality. Secondly, the effect of BMI on romantic relationship quality was clarified: although women's BMI interferes with relationship initiation, it does not appear to be related to the overall quality of established romantic relationships. BMI is, however, linked to specific problems within a relationship (i.e. decreased passion). Thirdly, the current findings replicated previous research linking body dissatisfaction to specific relationship problems (i.e. lower levels of satisfaction, trust, and love for one's partner), and demonstrated that body dissatisfaction is also associated with poorer overall relationship quality. Finally, few studies up to this point have explored the association between body image investment and romantic partnerships. The current study found that a maladaptive orientation towards one's body was predictive of two specific relationship quality components—intimacy and trust.

**Limitations and Directions for Future Research**

The large majority of the sample identified as Caucasian and heterosexual, limiting the generalizability of results. Participants had an average age of 20.69, indicating that the sample was relatively young. In the current study, age predicted overall relationship quality, as well as satisfaction and intimacy. It is unclear whether these and other findings would generalize to an older sample.

Approximately 90% of participants were involved in dating relationships. Although the average relationship duration was 27.93 months, participants were eligible to participate in the study as long as they had been involved in a relationship for a minimum of three months. Thus, it is unknown whether the current findings would replicate across a sample of individuals involved in longer-term relationships. Although Spanier (1976) explicitly states that the DAS is not limited to use among married couples, it appears that some items on this measure may not have been relevant to participants. For example, participants were asked to indicate their agreement or disagreement with their partners on "household tasks" when only 11.5% of participants reported living with their romantic partner. The poor reliability of the DAS Satisfaction and Affectional Expression subscales also suggest that, in isolation, they might be unreliable measures in the current sample. It is possible that the factors that influence relationship satisfaction differ among older, more mature couples that have been together for a longer period of time. Similarly, perhaps older, more mature couples express their affection differently than younger, and perhaps less serious couples. Neither the Satisfaction nor the Affectional Expression subscale was used as an outcome variable in isolation. Only the total DAS score, which had very good internal consistency, was used. Furthermore, a second measure of

romantic relationship quality (i.e. the PRQC Inventory) was included in this study in order to overcome the shortcomings of the DAS. Future research should attempt to replicate the current findings among a sample of individuals involved in longer-term or marital relationships.

One strength of this study was the use of multidimensional measures of perceived romantic relationship quality. However, ratings were obtained only from female partners, and relationship functioning is clearly affected by both partners' perceptions of the relationship. Because women have been shown to misperceive their partners' satisfaction with their bodies (e.g. Markey et al., 2004), future research should attempt to recruit romantic dyads and obtain ratings from both partners in order to provide a more complete understanding of a couple's relationship quality.

Future research would also benefit from using objective ratings of relationship quality in addition to the subjective ratings obtained here. For example, researchers could videotape couples interacting and then code the video for various aspects of relationship quality, such as intimacy. Although the large majority of research on romantic relationship relies on self-reported relationship perceptions, multi-method assessment of relationship quality would vastly improve construct validity.

Analyses investigating predictors of the six specific components of relationship quality were exploratory in nature. Conducting several regression analyses increases the risk of obtaining false positive results; however, given that using a more stringent alpha level reduces power, findings were interpreted at the standard alpha level (i.e. $\alpha = .05$). Cross-validation of these models was not possible in this study due to the sample size. The exploratory models will therefore need to be replicated in subsequent studies.

Researchers are encouraged to pay attention to the effect sizes (i.e. the unstandardized *B*-values), as the strongest effects are those most likely to replicate in the future.

Participants were aware that they would have their height and weight measured prior to completing the study measures. It is therefore possible that they were able to guess the purpose of the study, and that this may have influenced their responses. The extent to which this may have occurred is unknown, as there was no post-study debriefing session where participants could be directly asked about these issues. Future studies using a similar procedure would benefit from having two separate consent forms. That is, consent could first be obtained prior to the completion of self-report measures, and separate consent could subsequently be obtained prior to taking participants' measurements. The possibility of participants guessing the purpose of the study would be drastically reduced with such a methodological improvement.

The current research is cross-sectional in nature and therefore the direction of influence between BMI, body image variables, and relationship outcomes ultimately remains unclear. Future research should attempt to clarify causality through the use of longitudinal research. A longitudinal research design would also improve the ability to investigate the impact of weight gain or weight loss on romantic relationship quality.

Underweight individuals were not of primary interest in the current study. Because of the small size of the underweight group ($n$ =8), findings pertaining to this group should be interpreted with caution.

Finally, although the current research links BMI and body image dysfunction to relationship quality, mechanisms of influence are still poorly understood. For example, why does body dissatisfaction predict lower levels of perceived love within one's

partnership? In the future, potential mediators of these relationships should be investigated.

Research to date has not systematically investigated the impact of BMI and body image attitudes on both global and specific aspects of romantic relationship quality. Findings from the current study permitted a more nuanced look at how these variables relate to evaluations of romantic relationships. The current study clarified the impact of BMI on relationship quality, and replicated research demonstrating a compelling link between body image evaluation and the quality of romantic relationships. Additionally, findings provided evidence for an association between body image investment and aspects of relationship quality—an area that has previously received little attention in the research literature.

References

Ambwani, S., & Strauss, J. (2007). Love thyself before loving others? A qualitative and quantitative analysis of gender differences in body image and romantic love. *Sex Roles, 56*, 13-21. doi: 10.1007/s11199-006-9143-7

Antill, J. K., & Cotton, S. (1982). Spanier's Dyadic Adjustment Scale: Some confirmatory analyses. *Australian Psychologist, 17*, 181-189. doi: 10.1080/00050068208255933

Banasiak, S. J., Wertheim, E. H., Koerner, J., & Voudouris, N. J. (2001). Test-retest reliability and internal consistency of a variety of measures of dietary restraint and body concerns in a sample of adolescent girls. *International Journal of Eating Disorders, 29*, 85-89. doi:10.1002/1098108X(200101)29:1<85 ::AID-EAT14>3.0.CO;2-G

Banfield, S. S., & McCabe, M. P. (2002). An evaluation and clinical implications of the construct of body image. *Adolescence, 37*(146), 373-394. Retrieved from http://www.elsevier.com/wps/find/journaldescription.cws_home/622849/description

Baron, R. A., Byrne, D., & Watson, G. (2005). *Exploring social psychology* (4th Canadian ed.). Toronto: Pearson Education Canada.

Berscheid, E., & Regan, P. (2005). *The psychology of interpersonal relationships*. Upper Saddle River, NJ: Pearson Education.

Birnbaum, G. E. (2007). Attachment orientations, sexual functioning, and relationship satisfaction in a community sample of women. *Journal of Social and Personal Relationships, 24*, 21-35. doi: 10.1177/0265407507072576

Boyes, A. D., Fletcher, G. J. O., & Latner, J. D. (2007). Male and female body image and dieting in the context of intimate relationships. *Journal of Family Psychology, 21*, 764-768. doi: 10.1037/0893-3200.21.4.764

Boyes, A. D., & Latner J. D. (2009). Weight stigma in existing romantic relationships. *Journal of Sex & Marital Therapy*, *35*, 282-293. doi: 10.1080/00926230902851280

Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin, 21*, 267- 283. doi: 10.1177/0146167295213008

Brown, S. L., & Booth, A. (1996). Cohabitation versus marriage: A comparison of relationship quality. *Journal of Marriage and Family, 58,* 668-678. doi:10.2307/353727

Brown, T. A., Cash, T. F., Mikulka, P. J. (1990). Attitudinal body-image assessment: Factor analysis of the Body-Self Relations Questionnaire. *Journal of Personality Assessment, 55*, 135-144. doi: 10.1207/s15327752jpa5501&2_13

Bulmer, M.G. (1979). *Principles of Statistics*. New York, NY: Dover.

Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice, 12,* 421-433. doi:10.1093/clipsy/bpi053

Campbell, L. (2005). Responses to verifying and enhancing appraisals from romantic partners: The role of trait importance and trait visibility. *European Journal of Social Psychology, 35*, 663-675. doi:10.1002/ejsp.288

Canadian Health Measures Survey. (2010). Body Composition of Canadian Adults 2007 to 2009. (Statistics Canada Publication No. 82-625-X). Retrieved from http://www.statcan.gc.ca/access_acces/alternative_alternatif.action?l=eng&loc=2010001/article/11091-eng.pdf

Carr, D., & Friedman, M. A. (2006). Body weight and the quality of interpersonal relationships. *Social Psychology Quarterly, 69*, 127-149. doi: 10.1177/019027250606900202

Cash, T. F. (2000). *MBSRQ users' manual* (3rd ed.). Norfolk, VA: Old Dominion University.

Cash, T. F., & Grasso, K. (2005). The norms and stability of new measures of the multidimensional body image construct. *Body Image*, 2, 199-203. doi: 10.1016/j.bodyim.2005.03.007

Cash, T. F., & Labarge, A. S. (1996). Development of the Appearance Schemas Inventory: A new cognitive body-image assessment. *Cognitive Therapy & Research, 20*, 37-50. doi: 10.1007/BF02229242

Cash, T. F., & Lavallee, D. M. (1997). Cognitive-behavioral body-image therapy: Extended evidence of the efficacy of a self-directed program. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 15*, 281-294. doi: 10.1023/A:1025021926081

Cash, T. F., Maikkula, C. L., & Yamamiya, Y. (2004a). "Baring the body in the bedroom": Body image, sexual self-schemas, and sexual functioning among college women and men. *Electronic Journal of Human Sexuality*, *7*. Retrieved from http://www.ejhs.org/

Cash, T. F., Melnyk, S. E., & Hrabosky, J. I. (2004b). The assessment of body image investment: An extensive revision of the Appearance Schemas Inventory. *International Journal of Eating Disorders, 35,* 305-316. doi: 10.1002/eat.19264

Cash, T. F., Phillips, K. A., Santos, M. T., & Hrabosky, J. I. (2004c). Measuring "negative body image": validation of the Body Image Disturbance Questionnaire in a nonclinical population. *Body Image*, 1, 363-372. doi: 10.1016/ j.bodyim.2004.10.001

Cash, T. F., & Pruzinsky, T. (Eds.) (1990). *Body images: Development, deviance, and change*. New York: Guilford Press

Cash, T. F., & Pruzinsky, T. (Eds.) (2002). *Body image: A handbook of theory, research, and clinical practice*. New York: Guilford Press.

Cash, T. F., Santos, M. T., & Williams, E. F. (2005). Coping with body-image threats and challenges: Validation of the Body Image Coping Strategies Inventory. *Journal of Psychosomatic Research, 58*, 191-199. doi:10.1016/j.jpsychores.2004.07.008

Cash, T. F., Thériault, J., & Annis, N. M. (2004d). Body image in an interpersonal context: Adult attachment, fear of intimacy, and social anxiety. *Journal of Social and Clinical Psychology, 23*, 89-103. doi: 10.1521/jscp.23.1.89.26987

Chen, E. Y., & Brown, M. (2005). Obesity stigma in sexual relationships. *Obesity Research, 13*, 1393-1397. doi: 10.1038/oby.2005.168

Crowne D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349-354. doi: 10.1037/h0047358

Demir, M. (2008). Sweetheart, you make me really happy: Romantic relationship quality and personality as predictors of happiness among emerging adults. *Journal of Happiness Studies, 9*, 257-277. doi: 10.1007/s10902-007-9051-8

Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology, 31*, 419-436. doi: 10.1177/0022022100031004001

Dush, C. M. K., & Amato, P. R. (2005). Consequences of relationship status and the quality for subjective well-being. *Journal of Social and Personal Relationships, 22,* 607-627. doi: 10.1177/0265407505056438

Faith, M. S., & Schare, M. L. (1993). The role of body image in sexually avoidant behavior. *Archives of Sexual Behavior, 22*, 345-356. doi: 10.1007/BF01542123

Field, A. (2009). *Discovering Statistics Using SPSS*. (3rd ed.). London: Sage.

Fincham, F. D., & Beach, S. R. H. (2006). Relationship satisfaction. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 579-594). New York, NY: Cambridge University Press.

Fincham, F. D., Beach, S. R. H., & Kemp-Fincham, S. I. (1997). Marital quality: A new theoretical perspective. In R. J. Sternberg & M. Hojjat (Eds.), *Satisfaction in close relationships* (pp. 275 -304). New York: Guilford Press.

Fleming, J. S., & Courtney, B. E. (1984). The dimensionality of self-esteem: II. Hierarchical facet model for revised measurement scales. *Journal of Personality and Social Psychology, 46*, 404-421. doi: 10.1037/0022-3514.46.2.404

Fletcher, G. J. O., Simpson, J. A., & Thomas, G. (2000a). Ideals, perceptions, and evaluations in early relationship development. *Journal of Personality and Social Psychology, 79*, 933- 940. doi: 10.1037//0022-3514.79.6.933

Fletcher, G. J. O., Simpson, J. A., & Thomas, G. (2000b). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin, 26,* 340-354. doi: 10.1177/0146167200265007

Fowers, B. J. (1990). An interactional approach to standardized marital assessment: A literature review. *Family Relations, 39*, 368-377. doi: 10.2307/585215

Frazier, P. A., & Esterly, E. (1990). Correlates of relationship beliefs: Gender, relationship experiences and relationship satisfaction. *Journal of Social and Personal Relationships, 7*, 331-352. doi: 10.1177/0265407590073003

Friedman, M. A., Dixon, A. E., Brownell, K. D., Whisman, M. A., & Wilfley, D. E. (1999). Marital status, marital satisfaction, and body image dissatisfaction. *International Journal of Eating Disorders, 26*, 81–85. doi: 10.1002/(SICI)1098-108X(199907)26:1<81::AID-EAT10>3.0.CO;2-V

Fu, H., & Goldman, N. (1986). Incorporating health into models of marriage choice: Demographic and sociological perspectives. *Journal of Marriage and Family, 58*, 740- 758. doi: 10.2307/353733

Garn, S. M., Sullivan, T. V., & Hawthorne, V. M. (1989). Educational level, fatness, and fatness differences between husbands and wives. *The American Journal of Clinical Nutrition, 50*(4), 740-745. Retrieved from http://www.ajcn.org

Garner, D. M., & Garfinkel, P. E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine, 9*, 273-279. doi:10.1017/S0033291700030762

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

Garrow, J. S., & Webster, J. (1985). Quetelet's index (W/H2) as a measure of fatness. *International Journal of Obesity, 9*(2), 147-153. Retrieved from http://www.nature.com/ijoindex.html

George, D., & Mallery, P. (2003). *SPSS for windows step by step: A simple guide and reference 11.0 update* (4th ed.). Boston, MA: Allyn and Bacon.

Giovannelli, T. S., Cash, T. F., Henson, J. M., & Engle, E. K. (2008). The measurement of body-image dissatisfaction-satisfaction: Is rating importance important? *Body Image, 5*, 216- 223. doi:10.1016/j.bodyim.2008.01.001

Gorber, S. C., Shields, M., Tremblay, M. S., & McDowell, I. (2008). The feasibility of establishing correction factors to adjust self-reported estimates of obesity in the Canadian Community Health Survey. *Health Reports*, *19*, 71-82. Retrieved from www.statcan.gc.ca/pub/82-003-x/2008003/article/10680-eng.pdf

Gortmaker, S. L., Must, A., Perrin, J. M., Sobol, A. M., & Dietz, W. H. (1993). Social and economic consequences of overweight in adolescence and young adulthood. *New England Journal of Medicine, 329*, 1008-1012. doi: 10.1056/NEJM199309303291406

Gove, W. R., Hughes, M., & Style, C.B. (1983). Does marriage have positive effects on the psychological well-being of the individual? *Journal of Health and Social Behaviour*, *24*, 122-131. doi: 10.2307/2136639

Harris, M. B. (1990). Is love seen as different for the obese? *Journal of Applied Social Psychology, 20*, 1209-1224. doi: 10.1111/j.1559-1816.1990.tb01469.x

Hassebrauck, M., & Fehr, B. (2002). Dimensions of relationship quality. *Personal Relationships, 9*, 253-270. doi: 10.111/1475-6811.00017

Health Canada. (2003). *Canadian guidelines for body weight classification in adults*. (Catalogue No. H49-179/2003E). Retrieved from http://dsp-psd.pwgsc.gc.ca/Collection/H49-179-2003E.pdf

Henns, R. (1995). Waist-to-hip ratio and attractiveness: Replication and extension. *Personality and Individual Differences, 19*, 479-488. doi: 10.1016/0191-8869(95)00093-L

Horsburgh-McLeod, G., Latner, J.D., & O'Brien, K. S. (2009). Unprompted generation of obesity stereotypes. *Eating and Weight Disorders, 14*, 153-157. Retrieved from http://www.kurtis.it/ewd/it/

Hoyt, W. D., & Kogan, L. R. (2002). Satisfaction with body image and peer relationships for males and females in a college environment. *Sex Roles, 45*, 199-215. doi: 10.1023/A:1013501827550

Jarry, J. L., & Ip, K. (2005). The effectiveness of stand-alone cognitive-behavioural therapy for body image: A meta-analysis. *Body Image, 2*, 317-331. doi: 10.1016/j.bodyim.2005.10.001

Katz, J., Anderson, P., & Beach, S. R. H. (1997). Dating relationship quality: Effects of global self-verification and self-enhancement. *Journal of Social and Personal Relationships, 14*, 829-842. doi: 10.1177/0265407597146007

Kearns, J. N., & Fincham, F. D. (2005). Victim and perpetrator accounts of interpersonal transgressions: Self-serving or relationship-serving biases? *Personality and Social Psychology Bulletin, 20*, 1-13. doi: 10.1177/0146167204271594

Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin, 127*, 472-503. doi:10.1037/0033-2909.127.4.472

Kurdek, L. A., & Schmitt, J. P. (1986). Relationship quality of partners in heterosexual married, heterosexual cohabitating, and gay and lesbian relationships. *Journal of Personality and Social Psychology, 51*, 711-720. doi: 10.1037/0022-3514.51.4.711

Lim, B. K., & Ivey, D. (2000). The assessment of marital adjustment with Chinese populations: A study of the psychometric properties of the Dyadic Adjustment Scale. *Contemporary Family Therapy, 22*, 453-465. doi: 10.1023/A:1007801018478

Lipowicz, A. (2003). Effect of husbands' education on fatness of wives. *American Journal of Human Biology, 15*, 1-7. doi: 10.1002/ajhb.10119

Locke, H. J., & Wallace, K. M. (1959). Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living, 21*, 251-255. doi: 10.2307/348022

Markey, C. N., & Markey, P. M. (2005). Relations between body image and dieting behaviors: An examination of gender differences. *Sex Roles, 53,* 519-530. doi: 10.1007/s11199-005- 7139-3

Markey, C. N., & Markey, P. M. (2006). Romantic relationships and body satisfaction among young women. *Journal of Youth and Adolescence, 35*, 271-279. doi: 10.1007/s10964-005-9013-6

Markey, C. N., Markey, P. M., & Birch, L. L. (2001). Interpersonal predictors of dieting practices among married couples. *Journal of Family Psychology, 15*, 464-475. doi: 10.1037//0893-3200.15.3.464

Markey, C. N., Markey, P. M., & Birch, L. L. (2004). Understanding women's body satisfaction: The role of husbands. *Sex Roles, 51*, 209-216. doi: 10.1023/B:SERS.0000037764.40569.2b

Mendelson, M. J., Mendelson, B. K., & Andrews, J. (2000). Self-esteem, body esteem, and body-mass in late adolescence: Is a competence × importance model needed? *Journal of Applied Developmental Psychology, 21*, 249-266. doi:10.1016/S0193-3973(99)00035-0

Miller, C. T., & Downey, K. T. (1999). A meta-analysis of heavyweight and self-esteem. *Personality and Social Psychology Review, 3*, 68-84. doi: 10.1207/s15327957pspr0301_4

Miller, R. S., Perlman, D., & Brehm, S. S. (2007). *Intimate relationships*. New York, NY: McGraw-Hill.

Morrison, K. R., Doss, B. D., & Perez, M. (2009). Body image and disordered eating in romantic relationships. *Journal of Social and Clinical Psychology, 28*, 281-306. doi: 10.1521/jscp.2009.28.3.281

Murray, S. L., Holmes, J. G., & Griffin, D. W., (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology*, 78, 478-498. doi: 10.1037//0022-3514.78.3.478

Murray, S. L., Holmes, J. G., Griffin, D. W., Bellavia, G., & Rose, P. (2001). The mismeasure of love: How self-doubt contaminates relationship beliefs. *Personality and Social Psychology Bulletin, 27*, 423-436. doi: 10.1177/0146167201274004

Murray, S. L., Rose, P., Bellavia, G. M., Holmes, J. G., & Kusche, A. G. (2002). When rejection stings: How self-esteem constrains relationship-enhancement processes. *Journal of Personality and Social Psychology, 83*, 556-573. doi: 10.1037/0022-3514.83.3.556

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, *55*, 56-67. doi: 10.1037/0003-066X.55.1.56

Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and Family, 45*, 141-151. doi: 10.2307/351302

Pearce, M. J., Boergers, J., & Prinstein, M. J. (2002). Adolescent obesity, overt and relational peer victimization, and romantic relationships. *Obesity Research, 10*, 386–393. doi: 10.1038/oby.2002.53

Pole, M., Crowther, J. H., & Schell, J. (2004). Body dissatisfaction in married women: The role of spousal influence and marital communication patterns. *Body Image, 1*, 267-278. doi: 10.1016/j.bodyim.2004.06.001

Puhl, R. M., & Boland, F. J. (2001). Predicting female physical attractiveness: Waist-to-hip ratio versus thinness. *Psychology, Evolution & Gender, 3*, 27-46. doi: 10.1080/14616660110049563

Puhl, R. M., & Brownell, K. D. (2006). Confronting the coping with weight stigma: An investigation of overweight and obese adults. *Obesity, 14*, 1802–1815. doi: 10.1038/oby.2006.208

Puhl, R. M., Moss-Racusin, C. A., Schwartz, M. B., & Brownell, K. D. (2007). Weight stigmatization and bias reduction: Perspectives of overweight and obese adults. *Health Education Research, 23*, 347–358. doi: 10.1093/her/cym052

Raciti, M., & Hendrick, S. S. (1992). Relationships between eating disorder characteristics and love and sex attitudes. *Sex Roles, 27,* 553-564. doi: 10.1007/BF00290009

Regan, P. C. (1996). Sexual outcasts: The perceived impact of body weight and gender on sexuality. *Journal of Applied Social Psychology, 26*, 1803-1815. doi: 10.1111/j.1559-1816.1996.tb00099.x

Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology, 38*, 119-125. doi: 10.1002/1097-4679(198201)38:1<119::AID-JCLP2270380118>3.0.CO;2-I

Robinette, R. L. (1991). The relationship between the Marlowe-Crowne Form C and the validity scales of the MMPI. *Journal of Clinical Psychology, 47*, 396-399. doi: 10.1002/1097-4679(199105)47:3<396::AID-JCLP2270470311>3.0.CO;2-K

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rothblum, E. D., Miller, C. T., & Garbutt, B. (1988). Stereotypes of obese female job applicants. *International Journal of Eating Disorders, 7*, 277-283. doi: 10.1002/1098- 108X(198803)7:2<277::AID-EAT2260070213>3.0.CO;2-2

Rusticus, S. A., & Hubley, A. M. (2005, August). *Validation of two body image measures for men and women*. Poster session presented at the 113th American Psychological Association Conference, Washington, D.C.

Schumm, W. R., Paff-Bergen, L. A., Hatch, R. C., Obiorah, F. C., Copeland, J. M., Meens, L. D., & Bugaighis, M. (1986). Concurrent and discriminant validity of the Kansas Marital Satisfaction Scale. *Journal of Marriage and Family, 48*, 381-387. doi: 10.2307/352405

Schwartz, M. B., & Brownell, K. D. (2004). Obesity and body image. *Body Image, 1*, 43-56. doi: 10.1016/S1740-1445(03)00007-X

Sheets, V., & Ajmere, K. (2005). Are romantic partners a source of college students' weight concern? *Eating Behaviors, 6,* 1-9. doi: 10.1016/j.eatbeh.2004.08.00

Singh, D. (1993). Body shape and women's attractiveness: the critical role of waist-to-hip ratio. *Human Nature, 4*, 297-321. doi: 10.1007/BF02692203

Singh, D., & Luis, S. (1995). Ethnic and gender consensus for the effect of waist-to-hip ratio on judgment of women's attractiveness. *Human Nature, 6*, 51-65. doi: 10.1007/BF02734135

Snyder, D. K. (1979). Multidimensional assessment of marital satisfaction. *Journal of Marriage and Family, 41*, 813-823. doi: 10.2307/351481

Snyder, D. K. (1997). *Manual for the Marital Satisfaction Inventory-Revised*. Los Angeles: Western Psychological Services.

Sobal, J., Rauschenbach, B. S., & Frongillo, E. A. (1995). Obesity and marital quality: Analysis of weight, marital unhappiness, and marital problems in a U.S. national sample. *Journal of Family Issues, 16*, 746-764. doi: 10.1177/019251395016006004

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

SPSS Missing Value Analysis (16th ed.) (2007). Retrieved from http://www.hanken.fi/student/media/3618/spssmissingvalueanalysis160.pdf

Stakes, J., & Lauer, M. L. (1987). The consequences of being overweight: A controlled study of gender differences. *Sex Roles, 17*, 31-47. doi: 10.1007/BF00287898

Stevens, J. (2002). *Applied Multivariate Statistics for the Social Sciences* (4th ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Swami, V., & Tovée, M. J. (2005). The relative contribution of profile body shape and weight to judgments of women's physical attractiveness in Britain and Malaysia. *Body Image, 4*, 391-396. doi: 10.1016/j.bodyim.2007.07.2002

Tantleff-Dunn, S., & Gokee, J. L. (2002). Interpersonal influences on body image development. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 108-116). New York: Guilford Press.

Tantleff-Dunn, S., & Thompson, J. K. (1995). Romantic partners and body image disturbance: Further evidence for the role of perceived-actual disparities. *Sex Roles, 33*, 589-605. doi: 10.1007/BF01547719

Thelen, M. H. Kanakis, D. M., & Farmer, J. (1993). Bulimia and interpersonal relationships: An extension of a longitudinal study. *Addictive Behaviors, 18*, 145-150. doi: 10.1016/0306-4603(93)90044-A

Thompson, J. K., & Heinberg, L. J. (1999). The media's influence on body image disturbance and eating disorders: We've reviled them, now can we rehabilitate them? *Journal of Social Issues, 55*, 339-353. doi: 10.1111/0022-4537.00119

Tienboon, P., Wahlqvist, M. L., & Rutishauser, I. H. E. (1992). Self-reported weight and height in adolescents and their parents. *Journal of Adolescent Health, 13*, 528-532. doi: 10.1016/1054-139X(92)90019-8

Tiggeman, M., & Rothblum, E. (1988). Gender differences in social consequences of perceived overweight in the United States and Australia. *Sex Roles, 18*, 75-86. doi: 10.1007/BF00288018

Ward, R. A. (1977). The impact of subjective age and stigma on older persons. *Journal of Gerontology, 32*, 227-232. doi: 10.1093/geronj/32.2.227

Weissman, M. M. (1987). Advances in psychiatric epidemiology: Rates and risks for major depression. *American Journal of Public Health, 77*, 445-451. doi: 10.2105/AJPH.77.4.445

Wickrama, K. A. S., Lorenz, F. O., Conger, R. D., & Elder Jr., G. H. (1997). Marital quality and physical illness: A latent growth curve analysis. *Journal of Marriage and Family*, *59*, 143-155. doi: 10.2307/353668

Wiederman, M. W. (2002). Body image and sexual functioning. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 287-294). New York: Guilford Press.

Wilson, J. M. B., Tripp, D. A., & Boland, F. J. (2005). The relative contributions of waist-to-hip ratio and body mass index to judgments of attractiveness. *Sexualities, Evolution & Gender, 7,* 245-267. doi: 10.1080/14616660500238769

Wood, W., Rhodes, N., & Whelan, M. (1989). Sex differences in positive well-being: A consideration of emotional style and marital status. *Psychological Bulletin, 106*, 249-264. doi: 10.1037/0033-2909.106.2.249

World Health Organization. (2000). *Obesity: Preventing and managing the global epidemic*. (Report Series 894). Retrieved from http://www.who.int/nutrition/ publications/obesity/ WHO_TRS_894/en/index.html

Zimmer-Gembeck, M. J., & Petherick, J. (2006). Intimacy dating goals and relationship satisfaction during adolescence and emerging adulthood: Identity formation, age and sex as moderators. *International Journal of Behavioral Development, 30*, 189-199. doi: 10.1177/0165025406063636

Zook II, A. & Sipps, G. J. (1985). Cross-validation of a short form of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology, 41*, 236-238. doi: 10.1002/1097-4679(198503)41:2<236::AIDJCLP2270410217>3.0CO;2-H

## Appendix A: Participant Pool Advertisement

For this study, we are looking for female university students, aged 18 to 25 years, who have been involved in an exclusive romantic relationship for a minimum of three months. The purpose of the study is to evaluate personal characteristics that relate to interpersonal relationships. The study will require approximately 1 hour of your time. If you volunteer to participate in this study, you will complete a number of questionnaires about your feelings, behaviours, and interpersonal relationships. Participants 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. If you are interested in participating in the present study, please contact Carolyne at lee1116@uwindsor.ca.

## Appendix B: Screening Questions

1. Do you consider yourself to be overweight? YES/NO
2. Would most other people describe you as overweight? YES/NO
3. Have you ever been diagnosed with an eating disorder? YES/NO
4. Are you a high-level athlete in training? YES/NO

## Appendix C: Demographic Questionnaire

Please fill out the following information about yourself. If you are uncomfortable with a question, you may leave it blank. **This information will be kept confidential and secure, and will only be used for research purposes. This information will not be connected with your name and identifying information.** Thank you for taking the time to fill out this questionnaire

Participant ID:_____

Today's Date: _____/____/_____
YYYY MM DD

Age: _____

Height: _____

Weight: _____

Ethnicity (Please check one):

[ ] African-Canadian/Black
[ ] Asian or Pacific Islander
[ ] Caucasian/White
[ ] Latino/Latina
[ ] Middle Eastern
[ ] First Nations
[ ] Other (Please specify): _____

Year of Study (Please check one):

Undergraduate:
[ ] First
[ ] Second
[ ] Third
[ ] Fourth
[ ] Fifth
[ ] Other: _____

Graduate:
[ ] Masters
[ ] PhD
[ ] Other: _____

Living Situation (Please check one):

[ ] Alone
[ ] With Parents
[ ] In University Residence
If in residence, do you have a roommate? (Circle One): YES / NO
[ ] With Roommates (Please indicate how many): _____
[ ] With Significant Other
[ ] Other (Please specify): _____

Parents' Marital Status (Please check all that apply):

[ ] Married
[ ] Divorced
[ ] Separated
[ ] Common-law
[ ] Remarried
[ ] Widowed
[ ] Other (Please specify): _____

Have you ever been diagnosed with a psychological disorder? (Circle One) YES NO
If yes, please indicate the diagnosis (Check all that apply):
[ ] Mood Disorder (e.g. Major Depression, Bipolar Disorder)
[ ] Anxiety Disorder (e.g. Obsessive Compulsive Disorder, Social Phobia)
[ ] Eating Disorder (e.g. Anorexia Nervosa)
[ ] Psychotic Disorder (e.g. Schizophrenia)
[ ] Pervasive Developmental Disorder (e.g. Autism, Asperger Syndrome)
[ ] Attention Deficit Hyperactivity Disorder
[ ] Learning Disability
[ ] Alcohol Abuse/Dependence
[ ] Substance Abuse/Dependence
[ ] Other (Please specify): _____

Sexual Orientation (Please check one):

[ ] Heterosexual
[ ] Homosexual
[ ] Bisexual
[ ] Other (please specify): _____

Relationship Status (Please check one):

[ ] Single
[ ] Dating
[ ] Engaged
[ ] Married
[ ] Other (Please specify): _____

When did you first meet your current romantic partner? _____/_____
YYYY MM

When did you first become romantically involved with your current partner? _____/____
YYYY MM

On average, approximately how many hours per week do you and your partner spend:
Physically together (i.e. in the same room) _____
On the telephone _____
Communicating through text messages _____
Communicating through the Internet (e.g. Facebook, Skype, etc.) _____

Are you involved in a long distance relationship? (Circle One) YES NO
If yes, what proportion of your relationship has occurred over long distance?

[ ] 100%
[ ] 75%
[ ] 50%
[ ] 25%
[ ] Less than 25%

How much did you weigh at the beginning of the relationship?

[ ] More than I currently weigh
[ ] Less than I currently weigh
[ ] Approximately the same as I currently weigh

How frequently does your partner make positive comments about your body weight or shape?

[ ] Very often
[ ] Often
[ ] Once in a while
[ ] Never

How frequently does your partner make negative comments about your body weight or shape?

[ ] Very often
[ ] Often
[ ] Once in a while
[ ] Never

How long ago did you last weigh yourself?

[ ] Within the past week
[ ] Within the past month
[ ] Within the past 1-3 months
[ ] Within the past 4-6 months
[ ] Other (Please specify): _____

Generally, how often do you weigh yourself?

[ ] Every day
[ ] Once a week
[ ] Once a month
[ ] A few times a year
[ ] Once a year
[ ] Never

Appendix D: Consent Form

University of Windsor

**CONSENT TO PARTICIPATE IN RESEARCH**

Title of Study: Personal Characteristics and Interpersonal Relationships

You are asked to participate in a research study conducted by Carolyne E. Lee (Master's student) and Dr. Cheryl D. Thomas (Faculty) from the Psychology Department at the University of Windsor. The results of the study will contribute towards Carolyne E. Lee's Master's thesis.

If you have any questions or concerns about the research, please feel to contact Carolyne E. Lee at (xxx) xxx-xxxx and/or Dr. Cheryl D. Thomas at (519) 253-3000, ext. 2252.

PURPOSE OF THE STUDY

The purpose of this study is to examine how personal characteristics relate to interpersonal relationships in female university students.

PROCEDURES

If you volunteer to participate in this study, we would ask you to complete nine questionnaires, in random order. These questions will ask you about your feelings, behaviours, and interpersonal relationships. All questionnaires will be completed individually, in small groups supervised by a research assistant. After you complete the questionnaires, your height and weight will be measured by a research assistant, privately in a separate room.

The study will take place in two classrooms in the Psychology department at the University of Windsor. Your participation will require approximately 1 hour of your time.

POTENTIAL RISKS AND DISCOMFORTS

No risk, discomfort, or harm is anticipated by your participation in this study. You may find some of the questions to be of a personal nature. You are not required to respond to all questions, but the more information you provide, the better the researcher is able to use your data.

Some participants may feel uncomfortable knowing that they will be weighed by a research assistant. The only people who will be present in the room at that time will be you and the research assistant. If you do not wish to know how much you weigh, the

research assistant will not tell you. It is important to reiterate here that participation in this study is voluntary.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

No direct benefit to you is anticipated by your participation in this study.

Results from this study may further clarify the link between individual differences and interpersonal relationships.

PAYMENT FOR PARTICIPATION

Participants will not receive monetary payment for participation in this study; they will receive one course credit towards an applicable Psychology course at the University of Windsor as compensation for their participation.

CONFIDENTIALITY

Each questionnaire package will be assigned a research identification number and separated from the consent form. Your responses on the questionnaires, as well as your measured height and weight will be confidential. No one will be able to connect you with that information. Any information that is obtained in connection with this study and that can be identified with you will be kept in a secure and confidential location and will be disclosed only with your permission. Information that includes your name will be kept in a separate location from the information you provide to the researchers. Only summaries of group data are released; individual responses are not reported. Data will be kept for five years following the completion of this study. Your information will not be given to any unauthorized party. By law, an exception to confidentiality is that researchers must report to authorities any suspected cases of abuse or neglect.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Should you decide that you would not like the information you provide to be used in the present study, you may request that your data be removed from analysis.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results of this study will be available on the University of Windsor Research Ethics Board website in the summer of 2011.

Web address: www.uwindsor.ca/reb
Date when results are available: Summer 2011

SUBSEQUENT USE OF DATA

**[Please select one.]** This data [may / will not] be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

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

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study "Personal Characteristics and Interpersonal Relationships" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Name of Subject

_____ _____
Signature of Subject Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

## Appendix E: Data Tables

Table 1

*Basic Descriptive Data about the Sample*

| Variable | *Mean* | *SD* | Range |
|---|---|---|---|
| Objective BMI | 24.36 | 5.41 | 16.56-45.51 |
| Subjective BMI | 23.89 | 5.25 | 15.25-45.73 |
| Age | 20.69 | 1.86 | 18.00-25.00 |
| Relationship Duration | 27.61 | 18.24 | 3.00-78.00 |
| RSE | 22.38 | 4.85 | 7.00-30.00 |
| M-C Form C | 6.22 | 3.03 | 0.00-13.00 |
| EAT-26: Total | 8.40 | 7.83 | 0.00-39.00 |
| MBSRQ: Appearance Evaluation | 3.38 | .81 | 1.14-5.00 |
| MBSRQ: Appearance Orientation | 3.42 | .60 | 2.00-4.67 |
| MBSRQ: Body Areas Satisfaction | 3.31 | .62 | 1.78-4.89 |
| MBSRQ: Overweight Preoccupation | 2.61 | .90 | 1.00-4.75 |
| MBSRQ: Self-Classified Weight | 3.27 | .66 | 1.00-5.00 |
| ASI-R: Total | 3.33 | .59 | 1.55-4.85 |
| ASI-R: Self-Evaluative Salience | 3.18 | .06 | 1.17-4.75 |
| ASI-R: Motivational Salience | 3.56 | .70 | 1.63-5.00 |
| DAS: Total | 109.40 | 13.17 | 39.00-135.00 |
| DAS: Satisfaction | 32.99 | 3.39 | 22.00-40.00 |
| DAS: Cohesion | 17.61 | 4.94 | 7.00-24.00 |
| DAS: Affectional Expression | 9.38 | 2.06 | 2.00-12.00 |
| DAS: Consensus | 49.16 | 8.33 | 2.00-63.00 |
| PRQC: Total | 6.14 | .74 | 2.94-7.00 |
| PRQC: Satisfaction | 5.97 | .98 | 1.00-7.00 |
| PRQC: Commitment | 6.54 | .76 | 3.33-7.00 |
| PRQC: Intimacy | 6.21 | .78 | 3.67-7.00 |
| PRQC: Trust | 6.16 | 1.01 | 1.00-7.00 |
| PRQC: Passion | 5.52 | 1.23 | 1.00-7.00 |
| PRQC: Love | 6.45 | .89 | 2.33-7.00 |

*Note*. $N$ =139.

Table 2

*Pearson Product-Moment Correlations Among Major Study Variables*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Age | 1.00 | | | | | | | | | |
| 2. | Self-Esteem | .09 | 1.00 | | | | | | | | |
| 3. | Eating Pathology | .06 | -.35*** | 1.00 | | | | | | | |
| 4. | Relationship Duration | .17* | .05 | .14 | 1.00 | | | | | | |
| 5. | Social Desirability | .20* | .47*** | -.16 | -.01 | 1.00 | | | | | |
| 6. | Objective BMI | .17* | -.10 | .39*** | .01 | -.03 | 1.00 | | | | |
| 7. | Subjective BMI | .22* | -.07 | .38*** | .02 | .04 | .96*** | 1.00 | | | |
| 8. | Body Image Evaluation Composite | -.13 | .62*** | -.52*** | -.03 | .22** | -.48*** | -.43*** | 1.00 | | |
| 9. | Dysfunctional Body Image Investment | -.14 | -.48*** | .34*** | .04 | -.47*** | .12 | .09 | -.39*** | 1.00 | |
| 10. | Relationship Quality Composite | -.24** | .39*** | -.23** | .06 | .14 | -.14 | -.11 | .41*** | -.28** | 1.00 |

*Note*. $N = 139$.

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

Table 3

*Multiple Regression Analysis Predicting Overall Romantic Relationship Quality*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Step 1 | | | | |
| Constant | -.01 | .07 | | [-.14, .13] |
| Self-Esteem | .35*** | .08 | .39*** | [.21, .50] |
| Eating Pathology | -.12 | .08 | -.12 | [-.27, .03] |
| Age | -.23** | .07 | -.26** | [-.37, -.10] |
| Step 2 | | | | |
| Constant | .04 | .07 | | [-.10, .18] |
| Self-Esteem | .21* | .09 | .23* | [.02, .39] |
| Eating Pathology | -.04 | .08 | -.04 | [-.20, .13] |
| Age | -.22** | .07 | -.24** | [-.35, -.08] |
| Dysfunctional Body Image Investment | -.13 | .08 | -.14 | [-.28, .03] |
| Objective BMI | .06 | .09 | .06 | [-.12, .24] |
| Body Image Evaluation | .23* | .11 | .24* | [.01, .45] |
| Objective BMI × Body Image Evaluation | .13 | .07 | .15 | [-.01, .28] |

*Note*: $N = 137$. CI = confidence interval.

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

Table 4

*Final Regression Model Predicting Relationship Satisfaction*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Constant | -.03 | .08 | | [-.32, .75] |
| Age | -.23** | .08 | -.23** | [-.40, -.07] |
| Dysfunctional Body Image Investment | -.17 | .09 | -.17 | [-.34, .00] |
| Objective BMI | .27 | .16 | .14 | [-.04, .58] |
| Body Image Evaluation | .36*** | .09 | .33*** | [.17, .55] |

*Note*: $N = 135$. CI = confidence interval.

**$p < .01$. ***$p < .001$.

Table 5

*Final Regression Model Predicting Relationship Commitment*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Constant | .00 | .08 | | [-.16, .16] |
| Self-Esteem | .25** | .08 | .25** | [.08, .41] |

*Note*: $N = 139$. CI = confidence interval.

**$p < .01$.

Table 6

*Final Regression Model Predicting Relationship Intimacy*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Constant | -.01 | .08 | | [-.17, .15] |
| Age | -.25** | .08 | -.25** | [-.42, -.08] |
| Relationship Duration | .24 | .13 | .15 | [-.02, .50] |
| Dysfunctional Body Image Investment | -.24** | .09 | -.25** | [-.41, -.07] |
| Body Image Evaluation | .18 | .09 | .17 | [-.00, .37] |

*Note*: $N = 136$. CI = confidence interval.

**$p < .01$.

Table 7

*Final Regression Model Predicting Relationship Trust*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Constant | -.02 | .08 | | [-.17, .14] |
| Age | -.15 | .09 | -.14 | [-.33, .03] |
| Dysfunctional Body Image Investment | -.18* | .09 | -.18* | [-.35, -.00] |
| Body Image Evaluation | .25* | .09 | .23* | [.06, .43] |

*Note*: $N = 133$. CI = confidence interval.

*$p < .05$

Table 8

*Final Regression Model Predicting Relationship Passion*

| | *B* | *SE B* | β | 95% CI |
|---|---|---|---|---|
| Constant | -.08 | .08 | | [-.18, .15] |
| Age | -.14 | .09 | -.14 | [-.31, .03] |
| Self-Esteem | .27** | .08 | .27** | [.11, .43] |
| Objective BMI | -.34* | .16 | -.18* | [-.66, -.03] |

*Note*: $N$ =132. CI = confidence interval.

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

Table 9

*Final Regression Model Predicting Relationship Love*

| | *B* | SE *B* | β | 95% CI |
|---|---|---|---|---|
| Constant | .02 | .08 | | [-.15, .18] |
| Body Image Evaluation | .35*** | .09 | .31*** | [.17, .53] |

*Note*: $N = 135$. CI = confidence interval.

***$p < .001$.

Table 10

*Summary of Findings in Primary and Exploratory Analyses*

| Hypothesis or Research Question | Statistical Analysis | Findings |
|---|---|---|
| Regardless of BMI, body image evaluation will predict overall romantic relationship quality. | Multiple Regression, Hierarchical Entry Method | Hypothesis supported. Regardless of BMI, women who were dissatisfied with their bodies reported poorer overall romantic relationship quality than women who were satisfied with their bodies. |
| The impact of BMI on overall romantic relationship quality will be moderated by body image evaluation. | Multiple Regression, Hierarchical Entry Method | Hypothesis not supported. The effect of body image evaluation on overall romantic relationship quality was not more pronounced among overweight and obese women. |
| Does BMI predict overall romantic relationship quality? | Multiple Regression, Hierarchical Entry Method | BMI did not predict overall romantic relationship quality. |
| Does dysfunctional body image investment predict overall romantic relationship quality? | Multiple Regression, Hierarchical Entry Method | Dysfunctional body image investment did not predict overall romantic relationship quality. |
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship satisfaction? | Multiple Regression, Backwards Entry Method | Of the three variables, only body image evaluation predicted relationship satisfaction. |

| | | |
|---|---|---|
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship commitment? | Multiple Regression, Backwards Entry Method | Neither BMI, body image evaluation, nor dysfunctional body image investment predicted relationship commitment. |
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship intimacy? | Multiple Regression, Backwards Entry Method | Of the three variables, only dysfunctional body image investment predicted relationship intimacy. |
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship trust? | Multiple Regression, Backwards Entry Method | Both body image evaluation and dysfunctional body image investment predicted relationship trust. BMI did not predict trust. |
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship passion? | Multiple Regression, Backwards Entry Method | Of the three variables, only BMI predicted relationship passion. |
| Does BMI, body image evaluation, or dysfunctional body image investment predict relationship love? | Multiple Regression, Backwards Entry Method | Of the three variables, only body image evaluation predicted relationship love. |

# Vita Auctoris

Carolyne Elizabeth Lee was born in 1986 in Scarborough, Ontario. She graduated from Thornhill Secondary School in 2004. She subsequently obtained a B.A. (Hons.) in Psychology, graduating in 2008. Carolyne is currently a candidate for the Master's degree in Adult Clinical Psychology at the University of Windsor and hopes to graduate in Fall 2011.