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Body Image and Relationship Satisfaction Among Couples: The Role of Perceived Partner Appearance Evaluations and Sexual Satisfaction

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BODY IMAGE AND RELATIONSHIP SATISFACTION AMONG COUPLES:

THE ROLE OF PERCEIVED PARTNER APPEARANCE EVALUATIONS AND

SEXUAL SATISFACTION

by

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A Dissertation
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy at the
University of Windsor

Windsor, Ontario, Canada

Body Image and Relationship Satisfaction Among Couples:

The Role of Perceived Partner Appearance Evaluations and Sexual Satisfaction

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ABSTRACT

Previous research suggests that body image dissatisfaction is associated with decreased romantic relationship satisfaction, but little is known about why these variables are related. The purpose of the current study was to investigate mediating mechanisms involved in the association between body satisfaction and relationship satisfaction, building on earlier research that has highlighted the potential importance of sexual satisfaction, and incorporating the literature on partner perceptions. The study was informed by Murray, Holmes, and Collins' (2006) risk regulation framework, which identifies perceived partner regard as an important contributing factor to romantic relationship satisfaction. Specifically, the model states that people need to feel accepted by their partners in order to experience the sense of security necessary to engage in emotionally risky, relationship-enhancing behaviours, such as sexual intimacy. Participants were partners in 251 heterosexual dyads involved in committed relationships. Partners within each dyad completed online self-report questionnaires independently. Consistent with hypotheses, body dissatisfied individuals perceived that their partners shared their negative opinions of the respondent's body, regardless of their partner's actual feelings. Perceived partner dissatisfaction with the respondent's body predicted reduced sexual satisfaction, which in turn, predicted reduced relationship satisfaction. Major contributions of the current study include identifying explanatory processes underlying the body image and relationship satisfaction association, and showing that this process does not differ by gender. Significant methodological and statistical strengths of the current study include the inclusion of both romantic partners, the use of statistical

analyses that treat the dyad as the unit of analysis, and the assessment of alternative

mediation models.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

VITA AUCTORIS

202

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER I

Introduction

Recent data suggest that 43% of Canadian marriages end in divorce prior to a couples' 50th wedding anniversary (Statistics Canada, 2008). The fact that so many couples become dissatisfied in their relationships is problematic given the abundance of research attesting to the importance of romantic relationship satisfaction. Poor marital quality is linked to physical health variables, such as illness and mortality (Friedman, Tucker, & Schwartz, 1995; Holt-Lunstad, Birmingham, & Jones, 2008; Wickrama, Lorenz, Conger, & Elder, 1997). In contrast, high quality romantic relationships are positively correlated with happiness, subjective well-being, and life satisfaction, and negatively correlated with depression and stress (Demir, 2008; Dush & Amato, 2005; Gove, Hughes, & Style, 1983; Holt-Lunstad et al., 2008; Myers, 2000). The importance of relationship satisfaction for physical and emotional well-being points to the need to identify factors that affect romantic relationship satisfaction.

There is a long history of research devoted to identifying personal attributes that influence the way that individuals perceive and experience their relationships (Berscheid & Regan, 2005). For example, individuals with low self-esteem report lower levels of relationship satisfaction compared to those with high self-esteem (e.g., Murray, Holmes, & Griffin, 2000). More recently, researchers have examined the impact of body image on relationship satisfaction, acknowledging the importance of physical appearance and attraction in intimate partnerships.

Body dissatisfaction is pervasive among women (Ackard, Kearney-Cooke, & Peterson, 2000; McClaren & Gauvin, 2002), and body dissatisfaction among men

currently is recognized as much more common than was once assumed (Cafri & Thompson, 2004; McCreary, 2011). There is an emerging literature showing that individuals who are dissatisfied with their appearance also are more likely to be dissatisfied in their romantic relationships (Friedman, Dixon, Brownell, Whisman, & Wilfley, 1999; Hoyt & Kogan, 2001; Meltzer & McNulty, 2010; Morrison, Doss, & Perez, 2009). However, research within this area has been limited.

First, models that attempt to explain the association between body image and relationship satisfaction are scarce. The sole study that has investigated mediators involved in this association found that couples' sexual functioning played an intervening role in the association between wives' body dissatisfaction and their marital satisfaction (Meltzer & McNulty, 2010). Second, the research linking body image to relationship outcomes has focused disproportionately on the experience of women, and has overlooked the potential interpersonal consequences of body dissatisfaction in men.

The primary purpose of the current study was to investigate explanatory mechanisms underlying the association between body dissatisfaction and relationship satisfaction by building upon earlier research that highlights the role of sexual satisfaction and by incorporating research on partner perceptions. Previous studies show that personal body satisfaction and perceived partner satisfaction with the respondent's body are related for both genders (Goins, Markey, & Gillen, 2012; Markey, Markey, & Birch, 2004). Thus, a woman who is dissatisfied with her appearance is also more likely to believe that her partner is dissatisfied with her appearance. Although such beliefs are often inaccurate (Markey & Markey, 2006; Markey et al., 2004; Miller, 2001; Rieves & Cash, 1999), they may have harmful consequences for relationships. Individuals who

perceive that their romantic partners are dissatisfied with their appearance report lower sexual satisfaction (Rieves & Cash, 1996; Rieves & Cash, 1999; Szymanski & Cash, 1995), which in turn, is associated with lower relationship satisfaction (Sprecher, 2002; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006).

The current study was informed by the risk regulation framework, which highlights the critical importance of perceived partner regard in influencing romantic relationship quality (Murray, Holmes, & Collins, 2006). Specifically, the model states that people need to feel valued and accepted by their partners in order to experience the sense of security that is necessary for them to engage in emotionally risky, relationship-enhancing behaviours, such as sexual intimacy. In the current study, it was hypothesized that individuals who are dissatisfied with their appearance would be more likely to perceive that their partners shared their views; it is these negative perceptions that were hypothesized to contribute to reduced sexual and relationship satisfaction.

Despite evidence that male body dissatisfaction is relatively common (e.g., Tiggemann, Martins & Churchett, 2008), body image among men has been less frequently studied than body image among women. One of the major contributions of the current study is the focus on the association between body dissatisfaction and relationship satisfaction for both genders. Additionally, the current study extends the literature linking body image and relationship outcomes by testing meditating mechanisms that are hypothesized to be involved in this association. Finally, data were collected from both members of the romantic dyad, and advanced statistical approaches that treat the dyad as the unit of analysis were employed in the testing of hypotheses.

Literature Review

Body image. Body image is a multidimensional construct that includes perceptions, attitudes, and behaviours related to personal appearance (Gardner, 2011). Body image disturbance (BID) is a general term that is used to refer to disturbances in any one of these body image dimensions (Menzel, Krawczyk, & Thompson, 2011). The attitudinal aspects of body image include appearance evaluation (i.e., body satisfaction or dissatisfaction) and investment (i.e., the importance of appearance to the individual; Cash, 2011). BID studies have tended to place greater emphasis on evaluation relative to other body image components (Cash, 2011; Cash, Melnyk & Hrabosky, 2004b; Thompson, 2004). The focus of the current study was limited to body image evaluation given the general consensus that it represents a core dimension of the body image construct (Cash, 2011), and given its theoretical and empirical links to sexual and relationship satisfaction. For the purpose of clarity, the terms "body satisfaction" and "body dissatisfaction" are used throughout this document to refer to positive and negative body image evaluation, respectively.

Gender and body image. Body dissatisfaction is so pervasive among women that it has been characterized as "normative" by researchers within the field (Rodin, Silberstein, & Striegel-Moore, 1985). For example, a magazine survey completed by 3,627 women indicated that 60% of participants were dissatisfied when they looked at their bodies in the mirror (Ackard et al., 2000). Using a representative sample of American women, Cash and Henry (1995) demonstrated that 48% of participants reported dissatisfaction with their overall appearance. Within Canada, a large epidemiological study found that 53% of women ages 24 to 56 were dissatisfied with their body weight (McLaren & Gauvin, 2002).

The widespread body dissatisfaction among women is often explained from a sociocultural perspective, which focuses on how culturally-determined perceptions of attractiveness come to influence individual values, perceptions of attractiveness, and self-concepts (Tiggemann, 2011). According to this perspective, the importance that society places on physical appearance and the perpetuation of unrealistic standards of beauty are major contributors to BID (e.g., Markey, 2004). Unrealistic appearance standards are particularly likely to lead to body dissatisfaction when they become internalized (Cafri, Yamamiya, Brannick, & Thompson, 2005). In Western society, the current female body ideal places particular importance on thinness; evidence for this can be found in representations of the female body in magazines, film, and television (Tiggemann, 2011). For example, in a content analysis of four popular fashion magazines, Sypeck and colleagues (2004) found that female models had become significantly thinner between the 1980s and 1990s. Similarly, Voracek and Fisher (2002) found that *Playboy* magazine centerfold models became significantly thinner between 1953 and 2001, and they reported moderate to large effect sizes for their findings. Consistent with these socially-sanctioned thin body ideals, overweight and obese women report higher levels of body dissatisfaction than do normal weight women (Sarwer, Dilks, & Spitzer, 2011).

In the past, the assumption was that women experience much higher levels of body dissatisfaction than men do (e.g., Muth & Cash, 1997). However, prior research underestimated the prevalence of body dissatisfaction among men, largely due to the inappropriate use of measures that were developed for women, which focused primarily on the desire to be thin (Cafri & Thompson, 2004; McCreary, 2011). Findings from such

studies are likely to be biased because they fail to capture the focus of male body image concerns.

Whereas women experience pressure to be thin, men experience pressure to be lean and muscular (McCreary, 2011; Murnen, 2011; Tiggemann, 2011; Tiggemann, Martins, & Kirkbride, 2007). In fact, evidence suggests that the male body ideal has become both increasingly lean and muscular in the past few decades (Leit, Pope, & Gray, 2001; Pope, Olivardia, Gruber, & Borowiecki, 1999). For example, the physiques of popular male action figures (e.g., G.I. Joe) have become increasingly muscular since the 1960s, with many such toys exhibiting unattainable levels of muscularity (Pope et al., 1999). Other research has shown that male centerfold models in *Playgirl* magazine became leaner and more muscular between 1973 and 1997 (Leit et al., 2001).

More recent research using measures that address male body image concerns indicates that a substantial proportion of men do, in fact, experience dissatisfaction with their appearance (Olivardia, Pope, Borowiecki, & Cohane, 2004; Tiggemann, Martins, & Churchett, 2008). For example, Tiggemann and colleagues (2008) explored satisfaction with specific body parts in their all-male sample and found that 83% of men wanted to be more muscular, 68% wanted a larger penis, 62% wanted less body hair, 50% wanted to be thinner, and 48% wanted to be taller.

Early research on weight satisfaction in men yielded mixed findings, with some studies reporting that men desired to be heavier and others reporting that they desired to be leaner (Cafri & Thompson, 2004). However, many of the early studies used figure drawings to assess body satisfaction, an approach that does not distinguish between body size due to fat and body size due to muscle mass (Cafri & Thompson, 2004; Tiggemann

et al., 2007). The current consensus is that adult men desire to be both leaner (i.e., less

fat) and more muscular (McCabe & Ricciardelli, 2004; Olivardia et al., 2004; Tiggemann

et al., 2007). However, men's drive for muscularity is far more pronounced than their

desire to lose weight (Olivardia et al., 2004; Pope et al., 2000; Tiggemann et al., 2007).

For example, in one study, 50% of heterosexual men wanted to be thinner, whereas 83%

of these men wanted to be more muscular (Tiggemann et al., 2008). Another study

demonstrated that more than 90% of American men, 69% of Ukrainian men, and 49% of

Ghanaian men reported wanting to be more muscular, suggesting that muscle

dissatisfaction is pervasive (Frederick et al., 2007). In fact, Tiggemann and colleagues

(2007) have described muscle dissatisfaction among men as a state of "normative

discontent," analogous to characterizations of weight dissatisfaction seen in women

(Rodin et al., 1985). Thus, the evidence suggests that body dissatisfaction among men is

much more common than was once assumed.

  Why does body image disturbance matter? As detailed above, BID is common

among both women and men. Such disturbances have been associated with serious

physical and psychological health concerns, including low self-esteem (Ambwani &

Strauss, 2007; Cafri, Strauss, & Thompson, 2002), depression (Cafri et al., 2002;

Kostanski & Gullone, 1998; Olivardia et al., 2004), anxiety (Kostanski & Gullone, 1998;

Tantleff-Dunn & Lindner, 2011), extreme dieting (Crowther & Williams, 2011; Stice,

2001), use of performance enhancing drugs (Olivardia et al., 2004), and disordered eating

(Juarascio, Perone, & Timko, 2011; Olivardia et al., 2004). In addition to being

associated with negative outcomes at the individual level, research suggests that BID may

negatively impact relationships.

Relationship satisfaction. Research into the determinants of relationship satisfaction began in the 1930s and increased rapidly during the 1990s (Bradbury, Fincham, & Beach, 2000; Fincham & Beach, 2006). Currently, relationship satisfaction is the most frequently studied construct within the field of romantic relationships (Fincham & Beach, 2006; Graham, Diebels, & Barnow, 2011). Interest in relationship satisfaction arises out of the belief that it predicts whether a romantic relationship will endure or dissolve (Berscheid & Regan, 2005), and longitudinal evidence does, in fact, support a causal sequence that proceeds from romantic relationship dissatisfaction to relationship dissolution (Yeh et al., 2006).

However, research on relationship satisfaction has many benefits beyond simply predicting relationship dissolution. High quality relationships are positively associated with happiness, subjective well-being, and life satisfaction, and are negatively associated with depression and stress (Demir, 2008; Dush & Amato, 2005; Gove et al., 1983; Holt-Lunstad et al., 2008; Myers, 2000). Marital quality also has been linked to physical health, even after controlling for income, education, and work stress (Holt-Lunstad et al., 2008; Robles, Slatcher, Trombello, & McGinn, 2014; Wickrama et al., 1997). Other research indicates that children whose family environment is characterized by parental conflict and marital discord tend to have more emotional and behavioural problems (Jenkins & Smith, 1991), poorer academic achievement (Musick & Meier, 2010), increased substance use (Musick & Meier, 2010), poorer quality relationships with their parents (Amato & Booth, 1996; Riggio, 2004), and poorer quality romantic relationships as adults (Riggio & Weiser, 2008). Thus, the consequences of relationship dissatisfaction can be serious and wide-reaching.

Conceptual and methodological issues in the study of relationship satisfaction.

Recognition of the importance of relationship satisfaction has led to widespread research; however, many conceptual problems plague this area of study. Lack of conceptual clarity surrounding the construct is illustrated by the large number of terms used within the field—including relationship "satisfaction," "adjustment," "success," "happiness," and "quality"— that are sometimes used interchangeably and, at other times, used to refer to different constructs (Fincham & Beach, 2006; Fincham & Rogge, 2010). For example, whereas some researchers use "relationship satisfaction" and "relationship quality" synonymously (e.g., Fincham & Rogge, 2010; Snyder, 1997), others view "relationship quality" as a broader umbrella term that encompasses satisfaction as well as many other relationship constructs, such as love and trust (e.g., Fletcher, Simpson, & Thomas, 2000). The conceptual confusion is due in large part to the fact that the majority of relationship satisfaction measures are atheoretical, and simply possess high face validity (Berscheid & Regan, 2005; Fincham & Beach, 2006). Because "relationship quality" is a broad term that can be used to refer to different constructs, the more specific term "relationship satisfaction" will be used throughout this document.

Researchers interested in relationship satisfaction have generally taken one of two approaches. The first approach involves obtaining reports of behaviour that are thought to be indicative of a couples' relationship satisfaction, such as the amount of time spent together and the frequency of arguments (Berscheid & Regan, 2005; Fincham & Rogge, 2010). Another approach involves assessing partners' subjective feelings about their relationship (Fincham & Beach, 2006; Fincham & Rogge, 2010). The behavioural approach has fallen out of favour due to research findings demonstrating that couples are

unreliable reporters of their own behaviours (Christensen & Nies, 1980; Elwood &

Jacobson, 1982). In one study, for example, spouses completing an observation checklist

of their behaviours (e.g., acts of affection or communication) agreed on the occurrence of

behaviours less than half of the time (Jacobson & Moore, 1981). Another problem has

been the tendency for measures to combine couples' reports of relationship behaviours

with their subjective evaluations of the relationship. Such omnibus measures are of little

utility because it is difficult to interpret what they actually measure (Berscheid & Regan,

2005; Fincham & Beach, 2006; Fincham & Rogge, 2010). The two most widely used

relationship satisfaction measures—The Dyadic Adjustment Scale (Spanier, 1976) and

the Locke-Wallace Marital Adjustment Test (Locke & Wallace, 1959)—have been

criticized for being omnibus measures of relationship satisfaction (Berscheid & Regan,

2005; Fincham & Rogge, 2010). More recent approaches favour defining relationship

satisfaction as the individual's subjective evaluation of their romantic partnership

(Fincham & Rogge, 2010), an approach that was adopted in the current study.

Another important question is whether relationship satisfaction is unidimensional

or multidimensional in nature. Unidimensional approaches conceive of relationship

satisfaction as a single, global evaluation of the relationship, whereas multidimensional

approaches conceptualize relationship satisfaction as a complex construct that is

comprised of several distinct but related components. Although multidimensional

approaches have the benefit of offering more detail about a couple's relationship,

researchers do not agree about which specific dimensions of relationship satisfaction

should be part of the construct. For example, Snyder (1997) proposed that marital

satisfaction 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. In contrast, Hassebrauck and Fehr (2002) argue

that there are four different dimensions of relationship satisfaction: intimacy, agreement,

independence, and sexuality.

Another problem is that shared content between measures of relationship

satisfaction and its hypothesized determinants has led to inflated associations or even

spurious findings in past research (Berscheid & Regan, 2005; Fincham & Rogge, 2010).

This issue is particularly apparent when using multidimensional measures of relationship

satisfaction. For example, multidimensional relationship satisfaction measures, such as

the Perceived Relationship Quality Components Inventory (Fletcher et al., 2000) and

Marital Satisfaction Inventory-Revised (Snyder, 1997), often contain items pertaining to

the sexual relationship; when using these measures, associations between sexual

satisfaction and relationship satisfaction are likely to be inflated. Thus, there is a

compelling argument for employing more straightforward, unidimensional measures of

relationship satisfaction.

Fincham and Linfield (1997) attempted to find a middle ground between

unidimensional and multidimensional approaches to the study of relationship satisfaction.

They argued for a bidimensional conceptualization of the construct, in which positive and

negative evaluations of the relationship are viewed as relatively independent from one

another. Their research demonstrated that, unlike unidimensional measures,

bidimensional measures could differentiate between couples who were ambivalent (i.e.,

high in positive and high in negative evaluations) and those who were indifferent (i.e.,

low in positive and low in negative evaluations) while retaining the simplicity that

multidimensional measures lack. Despite Fincham and Linfield's (1997) convincing

arguments in favour of a bidimensional conceptualization, their model of relationship

satisfaction has been infrequently adopted. In the current study, a unidimensional

measure of relationship satisfaction was used in order to be consistent with other studies

in the area, and to avoid problems associated with the use of multidimensional measures.

   Body image and relationship satisfaction. Much research has been devoted to

identifying the individual characteristics that people bring to a relationship and that

influence relationship outcomes (Berscheid & Regan, 2005). For example, research has

shown that insecure attachment style (Brennan & Shaver, 1995), neuroticism (Karney &

Bradbury, 1995; Robins, Caspi, & Moffit, 2000), and low self-esteem (Erol & Orth,

2013) are associated with lower romantic relationship satisfaction. More recently,

researchers have begun examining the extent to which body image relates to romantic

relationships.

   Overall, findings indicate that body image is associated with several aspects of

romantic relationship functioning. For example, BID predicts a fear of emotional

intimacy (Cash, Thériault, & Annis, 2004c; Lee & Thomas, 2012), jealousy, and a lack of

trust in one's partner (Ambwani & Strauss, 2007; Brennan & Shaver, 1995; Lee &

Thomas, 2012; Raciti & Hendrick, 1992), and even lower levels of love within a

relationship (Lee & Thomas, 2012). Low levels of intimacy, trust, and love, in turn, are

associated with lower relationship satisfaction (Fletcher et al., 2000).

   Other studies have assessed the direct link between body dissatisfaction and

relationship satisfaction. This research has consistently shown that individuals who are

dissatisfied with their appearance report lower relationship satisfaction (Boyes, Fletcher, & Latner, 2007; Friedman et al., 1999; Hoyt & Kogan, 2001; Lee & Thomas, 2012; Meltzer & McNulty, 2010; Morrison et al., 2009; for an exception see Paap & Gardner, 2011). In one study, women's body dissatisfaction accounted for 19% of the variance in self-reported marital satisfaction and 6% of the variance in their husbands' reported marital satisfaction, even after controlling for body mass index (BMI) and self-esteem (Meltzer & McNulty, 2010). Available evidence generally indicates small to medium effect sizes for this association (Friedman et al., 1999; Lee & Thomas, 2012; Meltzer & McNulty, 2010; Morrison et al., 2009).

One limitation of the above research is that findings are largely cross-sectional and, therefore, cannot establish the direction of influence. Longitudinal studies have the advantage of being able to demonstrate that one variable predicts change in another variable over time, which is a necessary but insufficient condition for establishing causality. The one longitudinal study that has been conducted in this area does, in fact, provide support for the idea that body dissatisfaction affects relationship outcomes. Morrison and colleagues' (2009) study involving heterosexual romantic dyads found that women's weight dissatisfaction and body image self-consciousness during physical intimacy predicted decreases in their relationship satisfaction over a two-month period. Women's body image self-consciousness during physical intimacy also marginally predicted a decrease in their partner's relationship satisfaction.

Another limitation within this area of research is that most studies have been limited to assessing *women's* body image concerns and their relationship satisfaction. This trend relates to previous assumptions that BID is a female-specific problem

(McCreary, 2011). However, given more recent evidence that many men are dissatisfied with their appearance, exploring the potential impact of male body dissatisfaction on their relationships is an important research endeavour. Very few studies have included both female and male participants in their assessment of BID and its association with relationship satisfaction. Hoyt and Kogan (2001) reported that individuals who were dissatisfied with their dating situation were more dissatisfied with their appearance than those who were satisfied with their dating situation; moreover, the interaction between gender and dating satisfaction was not significant. Another study reported a small to moderate correlation between body dissatisfaction and relationship satisfaction even after controlling for gender (Friedman et al., 1999). Interestingly, Ambwani and Strauss (2007) found that body satisfaction was associated with "relationship happiness" for men, but not for women. Thus, taken together, the available evidence does suggest that body dissatisfaction and relationship satisfaction are linked for both women and men.

Finally, little is known about why body image and relationship satisfaction might be related. Using path analyses, Gagnon-Girouard and colleagues (2014) found that women's body satisfaction predicted their sexual satisfaction, which in turn, predicted their relationship satisfaction. However, mediation was not directly assessed and these results did not extend to men in their sample. To date, only one study has examined mediators of the body satisfaction and relationship satisfaction association. Meltzer and McNulty (2010) found that marital spouses' sexual functioning played a central role in the link between body image and relationship satisfaction. Specifically, they found that wives' body dissatisfaction predicted lower sexual frequency, which predicted lower sexual satisfaction. In turn, lower sexual satisfaction predicted lower marital satisfaction.

The results of this study are strengthened by the fact that the authors ruled out alternative explanations for their findings; they reported that sexual satisfaction did not predict wives' body dissatisfaction through sexual frequency and that marital satisfaction did not predict wives' body dissatisfaction through sexual satisfaction. However, these researchers did not assess husbands' body image concerns or use dyadic analyses that could have accounted for the interdependence within their relationship data.

In sum, correlational evidence indicates that body dissatisfaction is related to satisfaction with romantic partnerships. Although most of this research has focused on body dissatisfaction among women, some evidence suggests that body dissatisfaction and relationship satisfaction also are related for men. Further, although most researchers have only speculated as to why these two variables are related, results from the one study that has empirically tested explanatory mechanisms indicate that sexual satisfaction plays an important role in the association.

Sexual satisfaction. Much like the construct of relationship satisfaction, sexual satisfaction has been poorly conceptualized in past studies, and has been hampered by a lack of theory to guide investigations (Christopher & Sprecher, 2000; Lawrance & Byers, 1995; Sprecher & Cate, 2004). Scholars are divided between those who define sexual satisfaction as subjective feelings towards a sexual relationship and those who argue for the use of "objective" indicators of sexual satisfaction, such as the occurrence of an orgasm (Mark & Jozkoski, 2013). The latter method of assessing sexual satisfaction is problematic given that some women have infrequent orgasms, yet still have positive feelings about their sexual relationship (Sprecher & Cate, 2004). Indeed, one study found that 37% of women indicated that emotional and physical closeness during intercourse

was more important to them than experiencing an orgasm (Busing et al., 2001).

Similarly, Ferenidou and colleagues (2008) found that 80% of participants reported being

sexually satisfied, despite the fact that 70% of participants reported the presence of at

least one sexual problem. These findings support the view that distress about sexual

functioning is a more critical factor in assessing sexual dissatisfaction than the simple

presence of a sexual problem. Based on the aforementioned studies and Sprecher and

Cate's (2004) recommendations, during the current study, sexual satisfaction was defined

as respondents' subjective evaluations of their sexual relationships.

Historically neglected by both sexuality and relationship researchers, the study of

sexuality within established relationships increased markedly in the 1990s (Berscheid &

Regan, 2005; Christopher & Sprecher, 2000). The interest in sexual satisfaction grew as

researchers began to recognize its importance to romantic relationship functioning

(Sprecher & Cate, 2004). Research indicates that sexual satisfaction is related to

relationship satisfaction, love, and commitment toward a romantic partner, as well as to

relationship stability (Sprecher, 2002). In one study of individuals seeking a divorce,

32% of women and 30% of men endorsed sexual problems as the cause of the divorce

(Cleek & Pearson, 1985). Subsequently, several longitudinal studies have demonstrated

that couples who report poorer sexual satisfaction are more likely to divorce or end their

relationship (Edwards & Booth, 1994; Sprecher, 2002; Yeh et al., 2006).

Romantic couples—whether involved in marital, cohabiting, or dating

relationships—generally report high levels of sexual satisfaction (Berscheid & Regan,

2005; Edwards & Booth, 1994; Lawrance & Byers, 1995, Sprecher, 2002). However,

these findings may reflect a sampling bias (Christopher & Sprecher, 2000; Liu, 2003;

Sprecher, 2002). That is, couples who are less sexually satisfied are at greater risk of

relationship dissolution and, therefore, less likely to participate in dyadic research. One

problem with the high reported levels of sexual satisfaction (i.e., ceiling effects) is that

the ability to detect changes in this variable over time is somewhat limited (Sprecher &

Cate, 2004).

      Although most couples report that they are satisfied with their sex life, some

research indicates that sexual satisfaction declines slowly over the course of a

relationship, regardless of age (Liu, 2003; Pederson & Blekesaune, 2003; Sprecher,

2002). This finding may relate to the fact that sexual frequency, which is strongly related

to sexual satisfaction (Blumstein & Schwartz, 1983; Laumann et al., 1994), decreases

dramatically with marital duration (Sprecher & Cate, 2004). Researchers have suggested

that decreased sexual frequency may result from boredom and habituation in long-term

partners (Berscheid & Regan, 2005; Christopher & Sprecher, 2000; Pederson &

Blekesaune, 2003).

      Consistent with its poor conceptualization, the operationalization of sexual

satisfaction has been problematic. First, many measures of sexual satisfaction lack

adequate psychometric support (Daker-White, 2002). In fact, researchers often assess

sexual satisfaction using one- or two-item measures (e.g., Greeley, 1991; Sprecher,

2002). Lawrance and Byers (1995) question the validity of many existing measures on

the basis that they were developed with little theoretical guidance. Indeed, Daker-White

(2002) has noted that many measures of sexual satisfaction were developed for use in

clinical settings. Another issue is that several measures of sexual satisfaction were

developed for use with only one gender (Daker-White, 2002); these include the McCoy

Female Sexuality Questionnaire (McCoy & Matyas, 1998) and the Brief Sexual Function Questionnaire for Men (Reynolds et al., 1988). These measures are not ideal for use in studies where researchers are interested in comparing findings between heterosexual romantic partners. Finally, item overlap between measures of sexual satisfaction and measures of associated variables (e.g., relationship satisfaction, sexual frequency) can result in inflated correlations (Byers, 1999; Sprecher & Cate, 2004).

> ***Sexual satisfaction and relationship satisfaction.*** Sex is an important component of romantic relationships that is related to several relationship phenomena, including satisfaction, love, intimacy, commitment, and jealousy (Berscheid & Regan, 2005; Sprecher & Cate, 2004). Many couples seeking marital therapy report experiencing sexual problems in their relationships (Doss et al., 2004). Sprecher and Cate (2004) go as far as to describe a couple's sexual satisfaction as a barometer for the quality of their relationship.

Research conducted with individual respondents involved in dating and marital relationships consistently demonstrates an association between sexual and relationship satisfaction (Edwards & Booth, 1994; Lawrance & Byers, 1995; Meltzer & McNulty, 2010; Sprecher et al., 2002). Generally, moderate to large effect sizes are reported (e.g., Byers, 2005; Sprecher, 2002). Holmberg, Blair, and Phillips (2010) found that sexual satisfaction accounted for an impressive 43% of the variance in women's romantic relationship well-being (operationalized as satisfaction, love, and trust).

Recent studies that have examined the sexual and relationship satisfaction association at the dyadic level have reliably found that an individual's relationship satisfaction can be predicted from the individual's sexual satisfaction (Fisher, Donahue,

Long, Heiman, Rosen, & Sand, 2015; McNulty, Wenner, & Fisher, 2016; Stanik & Bryant, 2012; Yoo, Bartle-Haring, Day, & Gangamma, 2014). Some of these studies have also found evidence that an individual's sexual satisfaction predicts their *partner's* relationship satisfaction (Fisher et al., 2015; Yoo et al., 2014), although such dyadic effects have not been reported by others (McNulty et al., 2016; Stanik & Bryant, 2012).

Because the majority of research in this area has been cross-sectional, it is difficult to make inferences about the direction of influence between sexual satisfaction and relationship satisfaction. A relatively small number of longitudinal studies have been conducted, and the ones that exist provide conflicting evidence as to the nature of this association. Some findings suggest a causal relationship exists (McNulty et al., 2016; Yeh et al., 2006), whereas other reports indicate that the two variables are not directly causally linked (Byers, 2005, Sprecher, 2002). However, as McNulty and colleagues (2016) note, the longitudinal studies that have not found evidence of a causal relationship measured sexual and relationship satisfaction at only two points in time, limiting their ability to capture how much these variables can change over the course of a relationship. These same authors' conducted two eight-wave longitudinal studies with newlywed couples and found evidence of bidirectional causation. That is, they found higher levels of marital satisfaction at one time point predicted a positive change in sexual satisfaction at the next point. Similarly, higher levels of sexual satisfaction at one time point predicted a positive change in marital satisfaction at the next time point (McNulty et al., 2016). In contrast, findings from Yeh and colleagues' (2006) five-wave longitudinal study with established married couples indicated that higher sexual satisfaction at one wave predicted increases in marital satisfaction at subsequent waves, but marital

satisfaction at one wave did not predict sexual satisfaction at subsequent waves. They concluded that their study supports the idea that sexual satisfaction causes relationship satisfaction, but that the relationship is not bidirectional.

In sum, prior studies indicate that sexual and relationship satisfaction are strongly linked to each other, although the exact nature of the association remains an issue of debate. While acknowledging the lack of consensus within the field, I have adopted the conceptual framework provided by Christopher and Sprecher (2000), in which sexual satisfaction is assumed to impact relationship satisfaction, rather than the reverse; this framework has received empirical support in past research (Yeh et al., 2006), and is consistent with the risk regulation model of relationship satisfaction (i.e., the idea that interpersonally-risky relationship behaviours, such as sex, positively affect relationship satisfaction; Murray et al., 2006). However, in order to strengthen the internal validity of the current study, an alternative mediation model in which relationship satisfaction causally precedes sexual satisfaction was also tested.

Gender differences in the association between sexual satisfaction and relationship satisfaction. There is strong evidence that sexual and relationship satisfaction are linked for both women and men (e.g., Fisher et al., 2015; Yeh et al., 2006), but direct tests of gender differences are rarely conducted. Several lines of research suggest that women and men might differ with respect to the strength of this association. For example, men report a higher sex drive (i.e., more intense and more frequent sexual desire) than do women (Baumeister, Catanese, & Vohs, 2001; Oliver & Hyde, 1993), and view sex and physical intimacy as more important than women (Fletcher et al., 1999). Evolutionary perspectives (e.g., Buss & Schmidt, 1993) would

similarly predict that sexual satisfaction might be more important to men's relationship satisfaction than to women's relationship satisfaction. Consistent with this hypothesis, Sprecher (2002) found that the association between sexual and relationship satisfaction was stronger for men than for women.

On the other hand, women are more likely than men to associate sexuality with love, commitment, and intimacy and to view sexual desire as a romantic, interpersonal experience (Berscheid & Regan, 2005; Regan & Berscheid, 1996). This finding suggests that sexual satisfaction might have stronger ties to relationship quality for women as compared to men. Indeed, Kisler and Christopher's (2008) study of individual respondents involved in relationships indicated that the association between sexual and relationship satisfaction was stronger for women than for men.

Yoo and colleagues (2014) found gender differences in their dyadic study of 335 married couples. They reported that wives' sexual satisfaction predicted husband's relationship satisfaction, whereas husbands' sexual satisfaction did not predict wives' relationship satisfaction (i.e., gender differences in the partner effects). The authors speculated that being a good sexual partner might be a more important relationship goal for men, and as such, men may feel more satisfied in their relationships when their wives are sexually satisfied.

In summary, theory and research suggest that there are gender differences in the strength of the association between sexual and relationship satisfaction. However, some studies indicate that this association is stronger for women, whereas others indicate that it is stronger for men. Accordingly, gender differences were directly assessed in the current study.

Body image and sexual satisfaction. Qualitative research indicates that people view body image and sexual experiences as meaningfully linked to one another (Daniluk, 1993). This finding makes intuitive sense given that bodily contact and exposure are inherent in sexually intimate encounters (Zhaoyang & Cooper, 2013). In one large-scale Internet survey, 30% of heterosexual women and 22% of heterosexual men reported that their feelings about their bodies had a negative effect on the quality of their sex lives (Peplau et al., 2009). Indeed, existing research suggests that body image is associated with a variety of sexuality variables. Specifically, individuals with higher body satisfaction report higher levels of sexual esteem (Weaver & Byers, 2006), higher levels of sexual desire (Seal, Bradford, & Meston, 2009), higher levels of sexual arousability (Sanchez & Kiefer, 2007), more frequent sexual experiences (Ackard et al., 2000; Faith & Schare, 1993; Meltzer & McNulty, 2010), more frequent orgasms during sex (Ackard et al., 2000; Sanchez & Kiefer, 2007), and lower sexual anxiety (Weaver & Byers, 2006). Additionally, findings from a large-scale magazine survey indicated that women who are satisfied with their appearance report greater comfort having sex with the lights on, trying new sexual activities, and greater confidence in their ability to give their partner pleasure (Ackard et al., 2000). However, as Ferenidou and colleagues (2008) noted, sexual difficulties should not be equated with sexual dissatisfaction, as only the latter implies distress. Studies that have examined the direct association between body image and sexual satisfaction have found that individuals who feel more positively about their bodies report higher levels of sexual satisfaction (Holt & Lyness, 2007; Hoyt & Kogan, 2001; Meltzer & McNulty, 2010; Pujols, Meston, & Seal, 2010; Sánchez-Fuentes, Santos-Iglesias, & Sierra, 2014; Woertman & van den Brink, 2012).

Methodological issues.   There has been surprisingly little research on the potential influence of body image on sexual functioning (Ackard et al., 2000; Weaver & Byers, 2006). Given that this is a relatively new area of research, a few caveats are worth noting. First, studies in this area have employed cross-sectional designs and no known longitudinal studies have been conducted. Thus, questions about the direction of causality remain unanswered. Second, consistent with the female focus that has characterized the body image literature, the tendency in research investigating the link between body dissatisfaction and sexual outcomes has been to focus on female-only samples (e.g., Ackard et al., 2000; Meltzer & McNulty, 2010; Pujols et al., 2010; Steer & Tiggeman, 2008).

Finally, most studies of the body image and sexual satisfaction association have been conducted with individual participants, some of whom were not involved in a sexual relationship at the time of the study (e.g., Ambwani & Strauss, 2007; Hoyt & Kogan, 2001; Sanchez & Kiefer, 2007). In order to address this issue, Zhaoyang and Cooper (2013) included 144 couples in their diary study to better understand the relationship between body image and daily sexual experiences. They found that body satisfaction predicted higher sexual quality, but this association was not significant after controlling for satisfaction with the partner's body. Based on these findings, the authors suggest that previous reports of an association between body satisfaction and sexual functioning may be spurious. They argue that a more plausible explanation is that people who are body satisfied tend to partner with individuals that they find attractive, and this creates a rewarding sexual experience. Although the findings reported by Zhaoyang and Cooper (2013) are strengthened by the inclusion of both sexual partners and the use of dyadic

data analyses, some methodological issues that may have influenced their findings are worth noting; specifically, body image was measured using a nonvalidated three-item measure and sexual quality was operationalized as a composite measure reflecting sexual satisfaction as well as arousal and intimacy. Despite these limitations, their results have value; therefore, satisfaction with a partner's appearance (i.e., actual partner satisfaction with the respondent's body) was included as a control variable in the current study.

   Gender differences in the association between body image and sexual satisfaction. As previously noted, the majority of existing research assessing the association between body image and sexual satisfaction has focused on women. The small number of studies that have investigated gender differences in this association have yielded conflicting findings; some research suggests that the association is stronger for women whereas other findings suggest that no gender differences exist.

   Daniels and Bridges (2013) used an all-male sample in their exploratory study and found that, contrary to their predictions, none of the body image variables they assessed (i.e., drive for muscularity, body shame, and body surveillance) predicted sexual satisfaction. In their qualitative study, Ambwani and Strauss (2007) found that 17% of women reported that body image influenced the quality of sex in their romantic relationships whereas 0% of men endorsed this belief. Taken together, these two studies suggest that body image is associated with sexual satisfaction for women, but not for men.

   Fredrickson and Roberts (1997) argue that women's higher levels of self-objectification (i.e., the tendency to view one's body as an object to be appreciated by others) leads to chronic appearance monitoring, shame and anxiety during sex, and poor

awareness of bodily states, all of which can interfere with the ability to experience

rewarding and satisfying sexual interactions. Additionally, it has been suggested that,

unlike men, women equate their physical attractiveness with their ability to sexually

satisfy their partner (Dove & Wiederman, 2000). Thus, if a woman is dissatisfied with

her appearance, she may believe that she is a poor sexual partner, thereby influencing her

(and her partner's) sexual satisfaction.

On the other hand, findings from three studies in which gender differences were

assessed suggest that body satisfaction is equally important to men's and women's sexual

satisfaction (Holt & Lyness, 2007; Sanchez & Kiefer, 2007; Zhaoyang & Cooper, 2013).

Sanchez and Kiefer (2007) demonstrated that the mediational processes linking BID to

sexual arousability and pleasure were the same for both genders. Of all the

aforementioned studies, only Zhaoyang and Cooper's (2013) research has included both

partners involved in a sexual relationship. These investigators asked heterosexual

partners to complete diaries about their sexual experiences over a three-week period, and

found that zero-order correlations between body satisfaction and sexual quality did not

differ significantly by gender.

Contradictory findings from the studies described above are likely attributable to

differences in study measures (e.g., using affective versus evaluative measures of body

image), research design and methodology (e.g., qualitative versus quantitative research

designs, self-report surveys versus diary studies), and participant characteristics (e.g.,

participants involved in a current sexual relationship versus those who were not). At

present, there is no consensus in the literature as to whether the association between body

image and sexual satisfaction differs for women and men. With the exception of one

study, all research in this area has been conducted with individual respondents, rather

than with both partners in a sexual relationship. In the current study, both partners within

a romantic dyad were included and gender differences in the association between body

satisfaction and sexual satisfaction were directly assessed.

Perceived partner satisfaction with the respondent's body.

Body satisfaction and perceived partner satisfaction with the respondent's body.

As detailed earlier in this review, it has been established that body image is associated

with both sexual and relationship satisfaction. What is not known, however, is how or

why body dissatisfaction might influence the way that relationships are subjectively

experienced. Some authors (e.g., Cash & Fleming, 2002; Markey, Markey, & Birch,

2004) have suggested that the tendency to assume that other people see us as we see

ourselves may explain why these variables are related. Indeed, research has shown that

individuals low in self-esteem (i.e., those who do not view themselves in a positive

manner) also underestimate how positively their partners view them (Murray et al.,

2000). This idea is also consistent with self-verification theory (Swann, 1981).

According to the theory, people are motivated to seek consistency between their self-

views and self-relevant information because a stable, cohesive sense of self helps people

make sense of their world. As such, people may unconsciously process information in a

biased manner by paying attention to, interpreting, and recalling information in a way

that confirms their existing self-views. Indeed, a great deal of research suggests that self-

verification processes occur within the context of romantic relationships (Kwang &

Swann, 2010).

When applied within a body image framework, this theory suggests that

individuals who are unhappy with their appearance may assume that their partners are similarly unhappy with their appearance. Indeed, there is considerable empirical support for this notion. Numerous studies have reported positive associations between personal body satisfaction and perceived partner satisfaction with the respondent's body, with most studies reporting large effect sizes (Goins et al., 2012; Markey et al., 2004; Miller, 2001; Pole, Crowther, & Schell, 2004; Rieves & Cash, 1996, 1999; Thomas, 1989). Further, although the association between personal body satisfaction and perceived partner satisfaction has been demonstrated primarily among female and largely White samples, these relationships have also been established among male participants (Goins, et al., 2012; Miller, 2001) and Black participants (Miller, 2001; Thomas, 1989). Although personal body satisfaction and perceived partner satisfaction are strongly related, people tend to be less satisfied with their bodies than they perceive their partners to be; that is, individuals' body satisfaction tends to be lower than perceived partner satisfaction (Goins et al., 2012; Markey et al., 2004; Rieves & Cash, 1999)

Because the above studies are correlational in design, the direction of influence is not clear. It is important to note that there is also theoretical and empirical support for the opposite direction of influence—that is, the idea that perceived partner dissatisfaction causes body dissatisfaction (e.g., Tantleff-Dunn & Thompson, 1995)—and some studies have reported that body image and romantic relationship functioning are mutually influential (e.g., Morrison et al., 2009). Kleck and Strenta (1980) conducted a rare set of experimental studies that provide stronger evidence that personal feelings of attractiveness affect social perceptions. These researchers randomly assigned some participants to a condition in which a researcher used makeup to give them an obvious

facial scar. Unbeknownst to these participants, these scars were subsequently removed.

Participants then engaged in a brief conversation with a research confederate, who posed

as a fellow study participant. Relative to participants in other conditions, those who

believed they had a facial scar perceived that the confederate found them less attractive

and perceived differences in the confederate's gaze behaviour. Although this study was

not conducted within the context of romantic relationships, the findings do provide

compelling support for the idea that individuals' personal appearance evaluations

influence their perceptions of how others see them.

How accurate are perceptions of a partner's satisfaction with the respondent's

body? When evaluating how partner perceptions relate to relationship outcomes, one

important consideration is whether such perceptions are based in reality. In other words,

are individuals who believe that their partner is dissatisfied with their appearance

accurately gauging their partner's true feelings, or are such perceptions inaccurate?

In their review, Kenny and DePaulo (1993) provide evidence that people use their

own self-perceptions, rather than actual feedback from others, to determine how they are

perceived. As a result, people's perceptions of how others view them are often

inaccurate. Moreover, it is argued that perceptions of partner views are just as inaccurate

(if not more inaccurate) in intimate relationships because people become less attuned to

actual partner feedback, assuming that they already know what that feedback will be

(Kenny & DePaulo, 1993). Subsequent studies with dating and married couples have

confirmed that biased perceptions of partner views are prevalent in long-term romantic

relationships; specifically, individuals tend to project their own views onto their romantic

partner, leading to inaccurate perceptions of their partners' views (Kenny & Acitelli,

2001).

Also related to the accuracy of partner perceptions is the large research literature investigating perceived body ideals for members of the opposite sex. These studies find that both women and men have inaccurate beliefs about the body type that the opposite sex prefers: women overestimate the extent to which men find thin body types attractive and men overestimate the extent to which women find more muscular body types attractive (Cohn & Adler, 1992; Demarest & Allen, 2000; Fallon & Rozin, 1985; Forbes, Adams-Curtis, Rade, & Jaberg, 2001; Pope et al., 2000).

These inaccurate perceptions are also evident within the context of intimate relationships. Research indicates that our partners tend to be more satisfied with our appearance than we think they are (Markey & Markey, 2006; Markey et al., 2004; Miller, 2001; Rieves & Cash, 1999). In one dyadic study, actual partner satisfaction with the respondent's body was significantly more favourable than perceived partner satisfaction, which was significantly more favourable than personal body satisfaction (Rieves & Cash, 1999). In the same study, personal body satisfaction was found to be only slightly related to actual partner satisfaction with the respondent's body, whereas it was strongly related to perceived partner satisfaction. Similarly, Markey and colleagues (2004) reported that wives believed their husbands wanted them to be thinner than their husbands actually wanted them to be. Strikingly, in this study, wives' personal body satisfaction and perceived husbands' satisfaction with her body were unrelated to husbands' actual satisfaction. In sum, both women and men underestimate the extent to which their romantic partners are satisfied with their appearance; these inaccurate perceptions may have harmful consequences for a romantic relationship.

Body satisfaction, perceived partner satisfaction with the respondent's body,
sexual satisfaction, and relationship satisfaction. Intimate relationships have the

potential to offer great joy and satisfy humans' fundamental need for connection

(Baumeister & Leary, 1995). At the same time, however, such relationships are

emotionally risky and leave people vulnerable to potential hurt and rejection (Baumeister,

Wotman, & Stillwell, 1993). According to the risk regulation model of relationship well-

being, perceptions of what our partners think of us (i.e., perceived partner regard) are

critical in helping us manage this interpersonal risk (Murray et al., 2006; Murray et al.,

2000). Specifically, the model states that people need to perceive their partners as

responsive and accepting in order to experience the sense of security necessary to engage

in the emotionally-risky behaviours that contribute to relationship satisfaction. Crucially,

however, the way that individuals see themselves influences perceived partner regard

(Murray et al., 2000). In other words, people tend to project their own self-perceptions

onto their partners, a finding that is consistent with self-verification theory. Thus,

individuals who view themselves in a negative manner assume that their partners also

view them negatively. This perception leads individuals to defensively undermine their

partners and relationships, thereby decreasing relationship satisfaction (Murray et al.,

2000).

There is a substantial body of research that supports hypotheses derived from the

risk regulation theory. For example, Murray and colleagues (2000) reported that, relative

to high self-esteem individuals, individuals with low self-esteem significantly

underestimated how positively their partners saw them and reported lower levels of

relationship satisfaction. Further, perceived partner regard mediated the association

between self-esteem and relationship satisfaction amongst married and dating couples. In their prospective study, Derrick, Leonard, and Homish (2012) found that changes in perceived partner regard over nine years of marriage predicted divorce, and that relationship satisfaction mediated this association.

Although risk regulation theory was originally developed within a self-esteem framework (i.e., an individual's global evaluation of self), it is easily adaptable to a body image framework (i.e., an individual's evaluation of their appearance). As applied to body image, the theory predicts that individuals who are dissatisfied with their appearance will project their own dissatisfaction onto their partner. Perceiving that a romantic partner is dissatisfied with one's appearance is then expected to inhibit emotionally-risky behaviours that are known to be tied to relationship satisfaction, such as sex.

Applying the risk regulation framework to their body image research, Meltzer and McNulty (2010) reasoned that women who were dissatisfied with their appearance would be more likely to perceive sexual rejection from their husbands. As a result, it was expected that these women would engage in sexual activities less often, influencing the couples' sexual and relationship satisfaction. Indeed, the results of their study supported this hypothesis: sexual frequency and sexual satisfaction mediated the link between wives' body dissatisfaction and the couples' marital satisfaction, as reported independently by husbands and wives. One important limitation of this study, however, is that the authors did not assess for perceptions about a partner.

Although little research exists in this area, there is some evidence to suggest that perceived partner satisfaction with the respondent's body is linked to relationship

outcomes. Szymanski and Cash (1995) reported that women who believed that they did not meet their partner's perceived appearance ideals experienced their relationship as less satisfying. Extending these findings, Rieves and Cash (1996) reported that a woman's perception of her partner's satisfaction with her body correlated with her sexual and relationship satisfaction. Another study that included both women and men found that perceived partner satisfaction with the respondent's body uniquely predicted sexual satisfaction, beyond the effect of personal body satisfaction (Holt & Lyness, 2007).

In a recent experimental study, women were asked to imagine receiving appearance feedback from their partner that was either consistent with their own view (self-verifying), more positive than their own view (self-enhancing), or less positive than their own view (devaluing; Brown, Stukas, & Evans, 2013). After imagining receiving self-verifying appearance feedback from their partners, women who were body dissatisfied reported feeling less happy, but more understood by their partners. After imagining receiving self-enhancing appearance feedback from their partners, women who were body dissatisfied felt happier, but less understood by their partners. This research suggests that body dissatisfaction may put women in a no-win position in their relationships; that is, they have unfavourable reactions whether partner feedback enhances or confirms their own appearance evaluations.

Dyadic studies that have examined perceived partner appearance evaluations have produced mixed findings. In one study, perceived partner satisfaction with the respondent's body, but not actual partner satisfaction, correlated with sexual and relationship satisfaction for both genders (Rieves & Cash, 1999). This finding provides support for the idea that partner perceptions can be more influential than actual opinions

in determining relationship outcomes. Interestingly, however, the regression analyses performed by these researchers indicated that perceived partner satisfaction with the respondent's body predicted sexual and relationship satisfaction for men, but not for women. Results from another dyadic study produced contradictory results: actual partner satisfaction with the respondent's body, but not perceived partner satisfaction, predicted changes in women's relationship satisfaction over a two-month period (Morrison et al., 2009). Paap and Gardner (2011) reported that perceived partner dissatisfaction with the respondent's body size marginally predicted the respondent's relationship satisfaction (i.e., $p = .052$). In summary, despite some conflicting findings within the literature, there is both theoretical and empirical support for the idea that perceiving a partner to be unhappy with your appearance relates to both sexual and relationship satisfaction.

The Current Study

      Rationale for the current study. Research suggests that women and men who are dissatisfied with their appearance are more likely to be dissatisfied with their romantic relationships (e.g., Morrison et al., 2009). However, past studies have tended to examine this association only among women and to collect data from individual participants, rather than collecting data from both members of the romantic dyad. Moreover, there has been relatively little attention to factors that may explain the association between body dissatisfaction and romantic relationship satisfaction.

      The purpose of the current study was to investigate explanatory mechanisms that link body dissatisfaction to relationship satisfaction among heterosexual couples. This research builds on a previous study that highlights the mediating role of sexual satisfaction (Meltzer & McNulty, 2010). Additionally, based on risk regulation theory

and research documenting the inaccuracy of partner perceptions, the current study

assessed perceived partner satisfaction with the respondent's body as another possible

mediator of the body image and relationship satisfaction association. It was anticipated

that body dissatisfaction would predict perceived partner dissatisfaction with the

respondent's body; this perception was expected to predict lower sexual satisfaction,

which in turn, was expected to predict lower satisfaction with the relationship as a whole.

A simplified (i.e., nondyadic) version of the research model is presented in Figure 1.
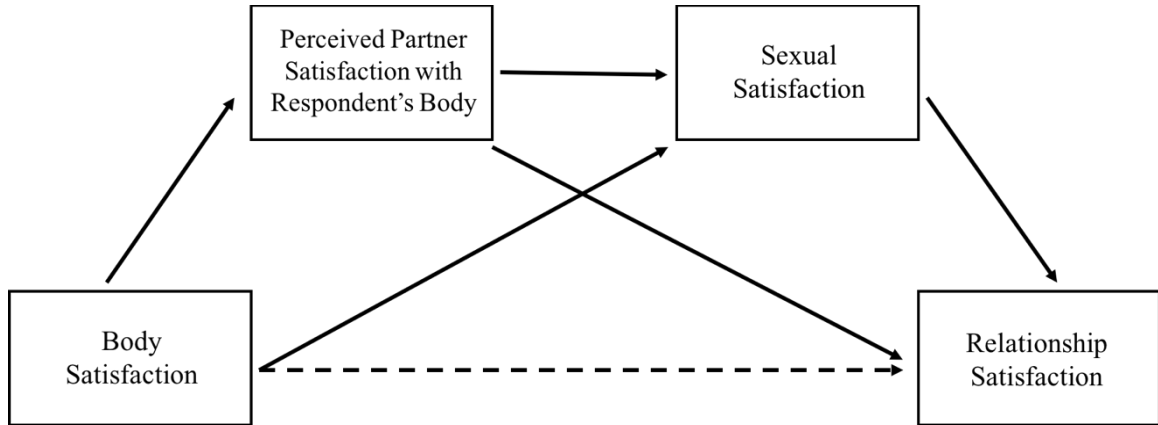
Figure 1. Simplified (nondyadic) version of the research model.

Contributions of the current study.

Theoretical and conceptual contributions. The current study makes a number of important theoretical and conceptual contributions to the research literature. First, as noted in Karney and Bradbury's (1995) influential review, relationship researchers tend to focus on predicting relationship satisfaction, rather than clarifying how it is that relationships become more or less satisfying. Consistent with this notion, most research linking body image to relationship outcomes has adopted simple models, and only speculate about why these variables might be related. To date, only one study has examined possible mediators involved in this relationship. Meltzer and McNulty (2010) reported that couples' sexual frequency and sexual satisfaction mediated the relationship between wives' body dissatisfaction and the couples' marital satisfaction. Following Karney and Bradbury's (1995) recommendations, the current research intended to advance the field by investigating mechanisms involved in the association between body dissatisfaction and relationship satisfaction. Specifically, two potential mediators were explored: perceived partner satisfaction with the respondent's body and sexual satisfaction.

Second, with a few notable exceptions (e.g., Friedman et al., 1999), there has been little attention to the association between body image and relationship satisfaction among men. This relates to the fact that research on men's body image is relatively recent (McCreary, 2011). Even studies that include both romantic partners tend to focus on the effect of women's BID on a couples' relationship functioning (e.g., Meltzer & McNulty, 2010; Morrison et al., 2009). However, men play an integral role in romantic relationship

success or failure, and understanding the potential role of men's body dissatisfaction in this context is important.

Third, many studies have linked body image to the perceived appearance ideals of members of the other sex (e.g., Fallon & Rozin, 1985) and romantic partners (e.g., Markey et al., 2004). Although both lines of research indicate that these perceptions tend to be inaccurate, the interpersonal effects of such perceptions are rarely explored. The current study extended research in this area by examining whether such inaccurate appearance perceptions are associated with lower sexual and relationship satisfaction.

Finally, the study of romantic relationships is often hampered by a lack of theory guiding research questions (Fincham & Beach, 2006). In contrast, the current study was informed by the empirically-supported risk regulation model of relationship functioning. This framework provides theoretical support for hypotheses about why perceived partner appearance evaluations were expected to play a role in both sexual and relationship satisfaction.

Methodological contributions. Several methodological problems that may have compromised the validity of some previous studies were addressed in the current study. These include (a) the collection of data from individuals rather than couples, (b) low statistical power, (c) the use of measures with poor psychometric properties, (d) the failure to control for related third variables that may bias associations of interest, and (e) the exclusive use of student samples.

Kashy, Campbell, and Harris (2006) reported that 70% of peer-reviewed studies on relationships rely on individual-level data. This approach fails to account for each partner's influence on the other, and can provide only a narrow understanding of

relationship processes. Therefore, in the current study, data were collected from both partners. Dyadic methodology allows for the detection of truly relational processes, in which one partner's variables are inherently tied to the other partner's variables. Such an approach might demonstrate, for example, that an individual's body dissatisfaction is related to their own relationship satisfaction, as well as their partner's relationship satisfaction. By including both members in a romantic dyad, additional research questions can be explored. For example, dyadic data makes it possible to evaluate the accuracy of partner perceptions (i.e., to compare perceived and actual partner satisfaction with the respondent's body) and to assess for potential gender differences. Traditional analytic strategies are inappropriate for use with dyadic data because they violate assumptions of independence, generating biased estimates of statistical significance; in some cases, nonindependence can increase the Type I error rate, and in others cases, it can increase the Type II error rate (Kenny, Kashy & Cook, 2006). Therefore, in the current study, advanced dyadic analyses were used to capture the complex and mutually influential nature of relationship dynamics in romantic pairs.

Another common problem in dyadic research is the use of small sample sizes, resulting in inadequate power. Kenny and colleagues (2006) estimate that the typical number of dyads in a couples study is 80, and they demonstrate that studies with this sample size would likely have insufficient power to detect small and medium effects. Based on power considerations, Ackerman and colleagues (2010) advise against conducting dyadic research with fewer than 100 couples. In the current study, 251 couples were included in the final sample to ensure sufficient power to detect hypothesized effects.

Related to power considerations, many studies in this research area have failed to use appropriate or psychometrically-sound measures, increasing the likelihood of measurement error. Common problems include using single-item questionnaires to assess sexual satisfaction, and assessing men's body satisfaction using measures developed to assess women's body image concerns. All of the instruments selected for use in the present study were carefully chosen because they capture the variables of interest and demonstrate good psychometric properties.

In prior research, investigators have often failed to measure or control for related third variables that can confound associations of interest. In the present study, self-esteem, depression, social desirability, and actual partner satisfaction with the respondent's body were controlled for in the statistical analyses due to their potential to bias estimates of the association between body satisfaction and relationship satisfaction. Additionally, sample inclusion and exclusion criteria limited variance in the study by (a) excluding married couples, given research showing that relationship satisfaction differs among dating/cohabiting couples and married couples (Brown, 2003; Hsueh, Morrison, & Doss, 2009), and (b) limiting the age range from 18 to 29, a developmental period characterized as "emerging adulthood" (Arnett, 2012) in order to control for possible cohort effects.

Lastly, Cooper and Sheldon (2002) report that 43% of the dyadic studies they reviewed relied exclusively on college samples. They argue that an overreliance on student samples is problematic because undergraduate students are young and may not yet be prepared to commit to a single partner. These authors suggest recruiting adult couples in ongoing relationships from the community. Accordingly, in the current study,

couples were recruited from a university as well as from the broader community, and all

couples were required to be involved in an exclusive long-term relationship in order to

participate.

Hypotheses

   Hypothesized associations between pairs of variables. The following

associations between pairs of variables were tested within the Actor-Partner

Interdependence Model (APIM; Kenny et al., 2006), which treats the dyad, rather than

the individual, as the unit of analysis. The basic model includes two predictor variables

(one for each partner) and two outcome variables (one for each partner). Within the

APIM, relationships between variables are labelled as actor effects, partner effects, and

covariances. An *actor effect* refers to the effect of an individual's predictor variable on

their own outcome variable, whereas a *partner effect* refers to the effect of an individual's

predictor variable on their partner's outcome variable. The APIM provides simultaneous

estimates of actor and partner effects; actor effects are estimated controlling for partner

effects, and vice versa. Partner effects are particularly important within dyadic research

because they represent truly relational processes in which an individual's outcome

depends on their partner's characteristics. Additionally, the model includes the

covariance between partners' predictor variables and the covariance between partners'

residuals on the outcome variables. In this way, the model accounts for the

interdependence that is inherent in dyadic data.

   The first six hypotheses tested associations between pairs of major study

variables. In each case, there was previous research to support these associations, but for

the most part, they have not been demonstrated within the APIM—that is, partner effects

for these associations have rarely been tested. Additionally, each of these hypothesized

associations is a component of the more complex meditation analysis that is the focus of

the current study. The APIM is depicted in Figure 2.
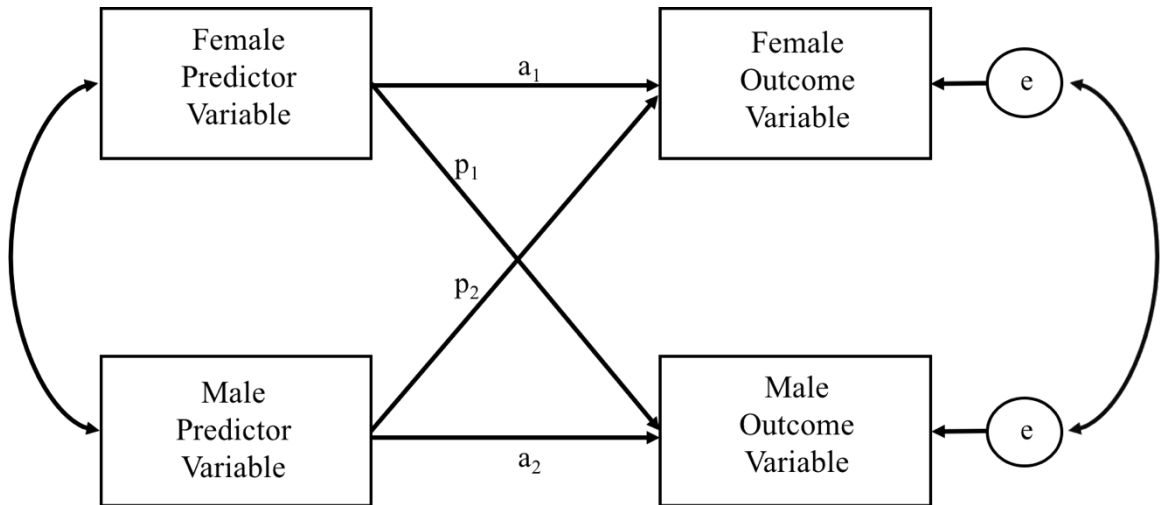
Figure 2. The actor-partner interdependence model (APIM). a = actor effect; p = partner effect; e = residual.

Hypothesis 1. Higher levels of body satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).

Hypothesis 2. Higher levels of body satisfaction would be associated with higher levels of perceived partner satisfaction with the respondent's body (actor effect).

Hypothesis 3. Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).

Hypothesis 4. Higher levels of sexual satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).

Hypothesis 5.   Higher levels of body satisfaction would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).

Hypothesis 6.   Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).

Mediation model.

Hypothesis 7. Hypothesis 7 addressed the question of whether perceived partner satisfaction with the respondent's body and sexual satisfaction mediated the association between body satisfaction and relationship satisfaction by testing a two-mediator, three-path mediation model. The addition of mediators to the APIM produces the Actor-Partner Interdependence Mediation Model (APIMeM; Ledermann, Macho, & Kenny,

2011). As in the APIM, an actor effect refers to a path between two variables for the same person, whereas a partner effect involves a path between variables for two different people. Within a two-mediator APIMeM, eight types of indirect effects are possible: actor-actor-actor effects, actor-partner-actor effects, actor-actor-partner effects, partner-actor-actor effects, partner-partner-partner effects, partner-actor-partner effects, and actor-partner-partner effects, and partner-partner-actor effects. Only the two types of mediated effects that were most relevant for purposes of the current study were hypothesized. An actor-actor-actor indirect effect was hypothesized to account for the association between *own* body satisfaction and *own* relationship satisfaction, whereas an actor-partner-actor indirect effect was hypothesized to account for the association between *own* body satisfaction and *partner* relationship satisfaction.

 Actor-actor-actor indirect effect. The association between *own* body satisfaction and *own* relationship satisfaction would be mediated by perceived partner satisfaction with the respondent's body and *own* sexual satisfaction. That is, own body satisfaction was expected to predict perceived partner satisfaction with the respondent's body. This perception was expected to predict own sexual satisfaction, which in turn, was expected to predict own relationship satisfaction. The actor-actor-actor indirect effect is depicted in Figure 3.

 Actor-partner-actor indirect effect. The association between *own* body satisfaction and *partner* relationship satisfaction would be mediated by perceived partner satisfaction with the respondent's body and *partner* sexual satisfaction. That is, own body satisfaction was expected to predict perceived partner satisfaction with the respondent's body. This perception was expected to predict partner sexual satisfaction,

which in turn, was expected to predict partner relationship satisfaction. The actor-

partner-actor indirect effect is depicted in Figure 4.
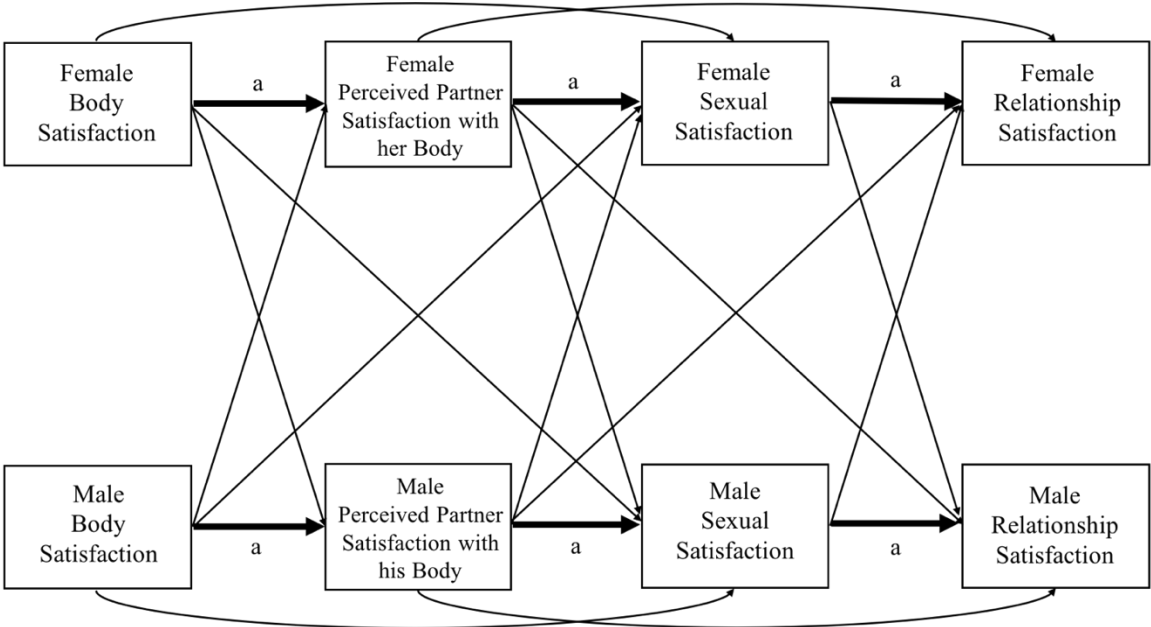
Figure 3. Hypothesized actor-partner interdependence mediation model (APIMeM) of body satisfaction, perceived partner satisfaction with the respondent's body, sexual satisfaction, and relationship satisfaction, with the actor-actor-actor indirect effect shown in bold. a = actor effect; p = partner effect. Correlations between predictor variables and errors of the outcome variables are not shown for the purpose of readability.
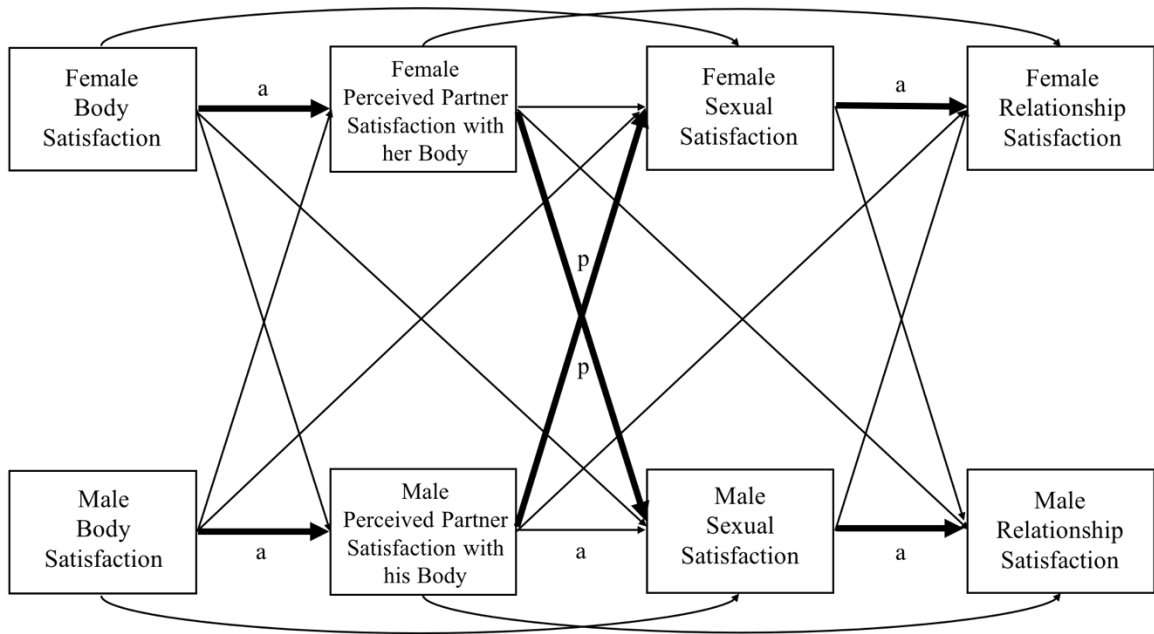
Figure 4. Hypothesized actor-partner interdependence mediation model (APIMeM) of body satisfaction, perceived partner satisfaction with the respondent's body, sexual satisfaction, and relationship satisfaction, with the actor-partner-actor indirect effect shown in bold. a = actor effect; p = partner effect. Correlations between predictor variables and errors of the outcome variables are not shown for the purpose of readability.

Subsidiary hypotheses.

Hypothesis 8. The association between body satisfaction and perceived partner satisfaction with the respondent's body would be stronger than the association between body satisfaction and actual partner satisfaction with the respondent's body.

Hypothesis 9. Body satisfaction would be lower than perceived partner satisfaction with the respondent's body, which in turn, would be lower than actual partner satisfaction with the respondent's body.

A summary of the hypotheses is presented in Table 1.

Table 1

Summary of Hypotheses

Hypothesis	Variables	Statistical analysis
1. Higher levels of body satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	Predictor: Body satisfaction Outcome: Relationship satisfaction	APIM
2. Higher levels of body satisfaction would be associated with higher levels of perceived partner satisfaction with the respondent's body (actor effect only).	Predictor: Body satisfaction Outcome: Perceived partner satisfaction with respondent's body	APIM
3. Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).	Predictor: Perceived partner satisfaction with respondent's body Outcome: Sexual satisfaction	APIM
4. Higher levels of sexual satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	Predictor: Sexual satisfaction Outcome: Relationship satisfaction	APIM
5. Higher levels of body satisfaction would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).	Predictor: Body satisfaction Outcome: Sexual satisfaction	APIM

6. Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	Predictor: Perceived partner satisfaction with respondent's body Outcome: Relationship satisfaction	APIM
7. Perceived partner satisfaction with the respondent's body and sexual satisfaction would mediate the association between body satisfaction and relationship satisfaction (actor-actor-actor and actor-partner-actor indirect effects).	Predictor: Body satisfaction Mediators: Perceived partner satisfaction with respondent's body and sexual satisfaction Outcome: Relationship satisfaction	APIMeM
8. The association between body satisfaction and perceived partner satisfaction with the respondent's body would be stronger than the association between body satisfaction and actual partner satisfaction with the respondent's body.	Body satisfaction; Perceived partner satisfaction with respondent's body; Actual partner satisfaction with respondent's body	APIM
9. Body satisfaction would be lower than perceived partner satisfaction with the respondent's body, which would be lower than actual partner satisfaction with the respondent's body.	Body satisfaction; Perceived partner satisfaction with respondent's body; Actual partner satisfaction with respondent's body	Friedman's test of differences

Note. APIM = Actor-Partner Interdependence Model; APIMeM = Actor-Partner Interdependence Mediation Model

Exploratory Questions

In addition to the above hypotheses, several other research questions were explored. As noted above, previous research has yielded contradictory findings about whether women and men differ in the strength of hypothesized associations between (a) body satisfaction and sexual satisfaction, (b) perceived partner satisfaction with the respondent's body and sexual satisfaction, and (c) sexual satisfaction and relationship satisfaction. Therefore, potential gender differences were assessed within each APIM as well as within the APIMeM.

Next, the extent to which satisfaction with a partner's body (i.e., actual partner satisfaction with the respondent's body) predicted sexual and relationship satisfaction was tested, with analyses conducted separately by gender. Additionally, the question of whether personal body satisfaction, perceived partner satisfaction with the respondent's body, or actual partner satisfaction with the respondent's body best predicted sexual and relationship satisfaction was evaluated.

CHAPTER II

Method

Participant Characteristics

Inclusion and exclusion criteria. Participants needed to be involved in an exclusive, heterosexual, romantic, and sexual relationship of at least six months' duration. Dating, engaged, and/or cohabiting couples were recruited for the study. If couples were living together, the duration of cohabitation could not exceed three years. Both partners had to be between 18 and 29 years of age.

Married couples were excluded from the study given research indicating that they differ from cohabiting and dating couples in relationship satisfaction, commitment, and problems related to physical affection and/or sex (Dush, Cohan, & Amato, 2003; Hsueh, Morrison, & Doss, 2009; Nock, 1995). Because cohabitation is both widespread and increasing (Bumpass & Lu, 2000; Statistics Canada, 2006), it was important to include cohabiting couples in the current study. However, partners who had been cohabiting for over three years (i.e., common-law spouses) were excluded because they may be more similar to married couples than to unmarried couples (e.g., with respect to their legal status, economic interdependence, and parenthood).

Although most relationship studies rely on married samples (Cooper & Sheldon, 2002), many studies in the area of body satisfaction and relationship satisfaction have used unmarried samples (e.g., Gagnon-Girouard et al., 2014; Morrison et al., 2009; Paap & Gardner, 2011). A major concern with unmarried, university student samples is that individuals may not be involved in serious and committed relationships at that stage in their lives (Cooper & Sheldon, 2002). Accordingly, participants were required to be

involved in an exclusive relationship of at least six months' duration in order to exclude

couples involved in short-term or casual partnerships. These criteria would also exclude

couples at a very early relationship stage, a time that is often characterized by romantic

idealization (i.e., the "honeymoon phase"). Couples were also recruited from the broader

community, in addition to university recruitment.

Couples involved in same-sex relationships were excluded from the current study

because a number of gender and sexual orientation differences have been identified in the

body image literature. For example, gay men experience greater dissatisfaction with their

appearance than straight men (Morrison, Morrison, & Sager, 2004), and lesbian women

are less invested in their appearance (Share & Mintz, 2002), less likely to internalize

societal standards of beauty (Share & Mintz, 2002), and more likely to value physical

condition/functionality in a partner over appearance and weight than are heterosexual

women (Heffernan, 1999). Taken together, these findings suggest that associations

between body satisfaction, perceived partner satisfaction with the respondent's body, and

relationship evaluations may differ for same-sex versus other-sex couples.

Finally, the age range of participants was restricted to 18 to 29 years to control for

possible cohort effects and reduce the risk of confounds that could stem from sampling

relationships at different developmental stages. Within Canada, the 18 to 29 year age

range is generally understood to encompass individuals in the developmental stage of

"emerging adulthood" (Arnett, 2012).

Refining the sample. A total of 330 couples (660 individuals) passed the initial

screening questions (see below) and agreed to participate in the current study via email.

Although 92.7% ($N = 612$) of individuals completed the survey, 43 couples could not be

admitted to the study because only one of the partners completed the survey. Thus, the

initial sample included 287 couples (87.0% of the potential sample of 330 couples).

Of the 287 couples who were initially admitted to the study, seven couples were

subsequently excluded because the responses of one or both partners suggested that they

had not completed the survey in good faith (e.g., partners' responses were unusually

similar, or one or both partners completed the survey in less than a third of the average

time taken to complete the survey for the sample as a whole). Upon further review of

responses, 16 couples were found not to meet inclusion criteria and were excluded from

the sample; in one case both partners agreed that their relationship was not monogamous,

in eight cases both partners agreed that they had not had sex, in one case both partners

agreed that the male participant did not meet the age criteria, and in six cases both

partners agreed that they had been romantically involved for less than six months. Five

couples were excluded because one partner reported a current eating disorder diagnosis.

Another eight couples who were multivariate outliers were subsequently dropped to

avoid undue influence on the analyses (see Results, pages 75 and 76); thus, 251 couples

were retained and employed in hypothesis testing and these couples comprise the final

sample for the current study.

Dyad characteristics. Couples reported that they had dated for an average of

29.2 months (*SD* = 19.7; range = 4.5 to 95.3 months)[1]. The majority of couples were

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[1] Partners in the same dyad occasionally provided somewhat different responses to the same question about their relationship (e.g., one partner might respond that they were "casually dating" while the other partner might respond that they were "seriously dating"). These kind of discrepancies are common in dyadic research (Chang, 2008) and were not considered sufficiently serious to exclude couples from the sample. Where discrepancies were noted, the response of the partner who initially signed up for the study was always chosen over the other partner's response for categorical variables (e.g., relationship status), whereas partners' responses were averaged for continuous variables (e.g., relationship duration).

"seriously dating" (90.8%; *n* = 228), whereas 4.8% of couples (*n* = 12) were "engaged,"

2.8% (*n* = 7) were "casually dating," and 1.6% (*n* = 4) reported that their relationship

status was "Other." One third of couples (33.9%; *n* = 85) reported that they lived

together, and cohabiting couples reported living together for an average of 14.4 months

(*SD* = 12.8; range = 0 to 48). Long distance relationships were reported by 18.3% (*n* =

46) of couples, and 1.2% (*n* = 3) of couples reported having children together. One

participant reported having a child from a prior relationship.

Individual participant characteristics. The mean age of individual participants

was 21.2 years (*SD* = 2.6; range = 17.5 to 29.0). The mean age for women was 20.8

years (*SD* = 2.4; range = 18.0 to 29.0) and the mean age for men was 21.6 years (*SD*

=2.7; range = 18.0 to 29.0). The majority of participants (81.3%; *n* = 408) identified as

"White or European-Canadian," 4.4% *(n* = 22*)* identified as "Black or African-Canadian

or Caribbean-Canadian," 2.2% (*n* = 11) identified as "First Nations or Aboriginal or Inuit

or Metis," 6.2% (*n* = 31) identified as "East Asian," 4.0% (*n* = 20) identified as "Middle

Eastern," 1.4% (*n* = 7) identified as "South Asian," and 4.8% (*n* = 24) identified as

"Other." It is important to note that these numbers add up to more than 100% because

participants were instructed to select all of the racial and ethnic identity categories that

applied to them. With respect to sexual orientation, 98.2% (*n* = 493) of participants

reported that their sexual orientation was "heterosexual," 1.2% (*n* = 6) of participants

reported that their sexual orientation was "bisexual," and 0.6% (*n* = 3) reported that their

sexual orientation was "Other." With respect to current living arrangements, 60.4% (*n* =

303) of the sample reported living with their parents or other family members, 18.9% (*n*

= 95) reported living with one or more roommates, 5.8% (*n* = 29) reported living alone,

and 2.4% (*n* = 12) reported an "Other" living situation. The majority of participants

(84.5%; *n* = 424) reported that they were a university or college student.

Based on participants' self-reported height and weight, 5.4% of the total sample

(*n* = 27) were underweight (BMI < 18.50), 59.0% *(n* = 296) were of normal weight (BMI

= 18.50 to 24.99), 27.3% (*n* = 137) were overweight (BMI = 25.00 to 29.99), and 6.6% (*n*

= 33) were obese (BMI ≥ 30.00). BMI could not be calculated for the 1.8% (*n* = 9) of

participants who did not report their height and/or weight. Among female participants,

8.4% (*n* = 21) were underweight, 66.5% *(n* = 167) were of normal weight, 18.3% (*n* = 46)

were overweight, and 5.6% (*n* = 14) were obese. BMI could not be calculated for the

1.2% (*n* = 3) of women who did not report their height and/or weight. Among male

participants, 2.4% (*n* = 6) were underweight, 51.4% (*n* = 129) were of normal weight,

36.3% (*n* = 91) were overweight, and 7.6% (*n* = 19) were obese. BMI could not be

calculated for the 2.4% (*n* = 6) of men who did not report their height and/or weight.

Recruitment

Of the 251 couples in the final sample, 80.5% (*n* = 202) were recruited from the

University of Windsor Psychology Participant Pool and 19.5% (*n* = 49) were recruited

from the community. Couples recruited from the community were older and reported

less satisfaction with their partner's appearance on one of the two body image measures;

however, there were no other significant differences (in demographic information or on

major study variables) between couples based on recruitment method (see Results, page

76).

The Psychology Participant Pool is a web-based system that allows undergraduate

students who are enrolled in participating psychology and business courses to register for

the pool, provide demographic information, respond to screening questions, and access

information about studies for which they meet the inclusion criteria. One partner from

each couple responded to several screening questions in order to determine whether the

couple was eligible to participate:

1. Are you currently involved in an exclusive, heterosexual, romantic, and sexual

    relationship?

2. If you are in a romantic relationship, have you been involved with your

    partner for at least six months?

3. If you live with your romantic partner, have you continuously lived together

    for more than three years?

4. Are you married?

5. If you are in a romantic relationship, are both you and your partner between

    the ages of 18 to 29 years?

Individuals who met inclusion criteria based on their responses to the screening

questions were able to access the study description, which indicated that its purpose was

to assess "thoughts, feelings, and perceptions among long-term romantic partners" (see

Appendix A). Participants who signed up for the study were sent an email asking them

to discuss participation with their partner, and if their partner agreed, to respond to the

email with the partner's name and email address.

Couples from the community were recruited by posting advertisements across

university campuses, stores, and coffee shops in Toronto and Windsor, Ontario, as well

as on Facebook (see Appendices B and C, respectively). The advertisements included a

description of the study and the researcher's email address. Snowball sampling was also

utilized, meaning that participating couples were asked to provide the study description and researcher's email address to other couples who might be interested in participating (e.g., friends, acquaintances). The partner who initiated contact with the researcher was sent an email, asking the individual to respond to the aforementioned screening questions in order to determine the couple's eligibility to participate. As above, they were also asked to discuss participation with their partner, and if their partner agreed, to respond to the email with the partner's name and email address.

Procedure

This research proposal was reviewed by the University of Windsor Research Ethics Board prior to participant recruitment. The procedures for couples recruited through the participant pool and the community were similar: each member of a romantic dyad was sent an email that included the study website, the password, and a research identification number (RID; see Appendices D and E). Although each participant received a unique RID, the RIDs were linked for romantic partners. Participants were instructed to complete the study within seven days of receiving their login information. If one or both partners did not complete the study within five days, they were sent reminder emails (see Appendix F).

After logging onto the study's website, partners independently provided informed consent (see Appendix G). Measures were presented in random order to control for possible order effects, with the exception of the body image measures (the three versions of each body image measure were grouped together for clarity) and the demographic questionnaire, which was presented last. Next, participants were asked, "Did you complete the questionnaires independent of your romantic partner?" in order to verify whether participants followed the study's instructions. After completing the measures, participants who were not registered in the participant pool were asked to provide an address where compensation would be mailed if they won the draw. Finally, participants were provided with instructions on how to clear their web browser's history and resources in the event that they experienced distress as a result of completing the survey (see Appendix H). All participants were informed that research findings would be

published on the University of Windsor Research Ethics Board website (www.http://www.uwindsor.ca/reb/study-results) upon completion of the study.

On average, each participant took 35 minutes to complete the survey. Several steps were taken to ensure that relationship partners completed study measures independently. First, study instructions included a reminder that each respondent should complete the questionnaire independently and that partners should refrain from discussing their responses until both partners had completed the study. Second, for the most part, the questionnaires were presented in random order to minimize the likelihood of partners responding concurrently to items presented in the same order. Finally, as noted above, seven couples were excluded from the final sample because survey responses suggested that one or both partners had not completed the survey in good faith.

Individuals enrolled in the participant pool received one course credit for their participation, which could be applied to their final grade in any eligible psychology course. If both partners were enrolled in the pool, each partner earned one course credit for an eligible psychology course. Individuals who were not enrolled in the participant pool (i.e., dyads recruited from the community and individuals who were partners of participants in the pool, but who were not themselves in the pool) had their name entered into a draw for a chance to win one of ten $50 gift certificates to The Keg Steakhouse and Bar after both partners had completed the study. The primary researcher contacted the winners of the draw via email and either sent the gift card electronically or through the mail.

Measures

 Demographic information. Participants were asked to provide demographic information (e.g., age, racial/ethnic identity) and self-report their height and weight. Participants' self-reported height and weight were used to obtain their BMI, which is calculated by dividing individuals' weight in kilograms by their square height in metres. BMI was considered for use as a control variable given its strong correlation with body image (Markey & Markey, 2006; Markey et al., 2004; Schwartz & Brownell, 2004). Additionally, participants were asked several questions about their current romantic relationship (e.g., relationship duration and status). The Demographic Questionnaire is included in Appendix I.

 Self-esteem. Self-esteem was controlled for in the statistical analyses because it is known to correlate with body image (Ambwani & Strauss, 2007) and relationship satisfaction (Murray et al., 2000). The 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is a widely used measure of global self-esteem. Participants respond to items assessing general feelings about oneself on a 4-point Likert scale (1 = *strongly agree* to 4 = *strongly disagree*). Negatively keyed items were reverse scored and items were added together to create a total score; higher scores reflect higher levels of self-esteem. A sample item is "I am able to do things as well as most other people."

 Factor analytic research supports the measure's construct validity, demonstrating that the RSE is best characterized as a measure of global self-esteem (Fleming & Courtney, 1984; Gray-Little, Williams, & Hancock, 1977; Robins, Hendin, & Trzesniewski, 2001). Past researchers have reported an alpha coefficient value of .92 (Rosenberg, 1979) and a one-week test-retest reliability coefficient value of .82 (Fleming

& Courtney, 1984). In the current sample, the alpha coefficient value was .89 for women and .88 for men.

Social desirability. Social desirability was controlled for in the statistical analyses given the sensitive nature of some questionnaire items, such as those pertaining to sexual satisfaction. 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. Negatively keyed items were reverse scored and items were added together to create a total score; higher scores reflect higher levels of socially desirable responding. 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). Internal consistency reliability coefficients for the standard scale and the short form of the scale are .88 and .76, respectively (Crowne & Marlowe, 1960; Reynolds, 1982). 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). In the current sample, the alpha coefficient value was .70 for women and .69 for men.

Depression. Depression was controlled for in the statistical analyses due to its association with body dissatisfaction (Wiederman & Pryor, 2000) and relationship satisfaction (Karney & Bradbury, 1995). The Center for Epidemiologic Studies Depression Scale—Revised (CESD-R; Eaton, Smith, Ybarra, Muntaner, & Tien, 2004) is an updated version of one of the most widely used measures of depression, the Center for

Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The CESD-R is a 20-item measure that asks participants to indicate how they felt or behaved "within the past week or so." Participants respond to items on a 4-point Likert scale (0 = *not at all or less than one day last week* to 3 = *nearly every day for two weeks*). Items were added together to create a total score, and higher scores reflect higher levels of depressive symptoms. Sample items are "I could not shake off the blues" and "I wished I were dead."

Factor analyses support the measure's construct validity (Eaton et al., 2004; Van Dam & Earleywine, 2011) and the measure's items and classification scheme are consistent with the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) diagnostic criteria. The CESD-R has demonstrated high internal consistency in past research, with alpha coefficient values ranging from .87 to .98 (Eaton et al., 2004). In the current sample, the alpha coefficient value was .90 for women and .88 for men.

Body satisfaction, perceived partner satisfaction with the respondent's body, and actual partner satisfaction with the respondent's body.

The Body-Image Ideals Questionnaire-Expansion (BIQ-E; Szymanski & Cash, 1995) is an adaptation of the commonly used Body-Image Ideals Questionnaire (BIQ; Cash & Szymanski & Cash, 1996). Like the BIQ, the BIQ-E provides an investment-weighted measure of body image evaluation; specifically, it assesses body satisfaction-dissatisfaction by measuring perceived discrepancies from appearance ideals, while also considering the importance of these ideals to the individual. The 44-item BIQ-E was used to assess personal body satisfaction and perceived partner satisfaction with the respondent's body.

The BIQ-E asks participants to rate 11 specific physical attributes from their own viewpoint and their romantic partner's viewpoint according to two self-guides: "ideal" and "ought." Only the "ideal" guide was used in the current study. For each attribute, participants were asked to think about their personal ideal and their perception of their partner's ideal, and then evaluate how closely their attribute matches the ideal. Discrepancy ratings for each physical attribute are provided on a 4-point scale (-1 = *exactly as I am*, +1 = *almost as I am*, +2 = *fairly unlike me*, +3 = *very unlike me*). After completing discrepancy ratings, participants then rate the importance that they place (or that their partner places) on each ideal on a 4-point scale (0 = *not important*, 1 = *somewhat important*, 2 = *moderately important*, 3 = *very important*). The 11 physical attributes included in the measure—height, skin complexion, facial features, hair texture/thickness, muscle tone/definition, body proportions, weight, chest size, physical strength, physical coordination, and overall appearance—were determined based on previous research.

The BIQ-E generates three scores for each of the two viewpoints (personal viewpoint and partner viewpoint). The Discrepancy score provides an average of discrepancy ratings across the 11 physical attributes, and represents a pure measure of body satisfaction. The Importance score provides an average of importance ratings across the 11 physical attributes. The composite Weighted Discrepancy score is the average of the 11 Discrepancy by Importance cross-products, and represents an investment-weighted measure of body satisfaction. The Weighted Discrepancy score ranges from -3 (*very important congruence*) to +9 (*very important discrepancy)*; thus higher scores represent greater investment-weighted body dissatisfaction. The BIQ-E's

Weighted Discrepancy score is thought to provide a more valid measure of BID by capturing both body satisfaction and the importance of appearance ideals to the individual.

Minor changes to the BIQ-E's instructions also permitted its use as a 22-item measure of actual partner satisfaction with the respondent's body (i.e., satisfaction with partner's body). On the adapted measure, for each physical attribute, participants were asked to indicate how closely their current partner matched the participant's appearance ideals for a romantic partner, then indicate the importance that they place on each physical attribute in a partner. The purpose of including this as a control variable was to assess whether perceived partner satisfaction with the respondent's body predicted sexual and relationship satisfaction, regardless of actual partner satisfaction with the respondent's body.

Factor analytic research supports the construct validity of the original measure, and the BIQ Discrepancy and Importance scores correlate in an expected manner with existing measures of body image evaluation and investment, respectively (Cash & Szymanski, 1995). Although originally developed using female samples, the BIQ/BIQ-E includes physical attributes that reflect men's central body image concerns (e.g., muscle tone/definition), suggesting that this is an appropriate measure to use with male populations. Furthermore, results of studies that have examined the reliability of the BIQ in male samples indicate that alpha coefficient values for the Weighted Discrepancy score are satisfactory and comparable to those reported for women (Cash et al., 2004b; Giovannelli, Cash, Henson, & Engle, 2008).

The BIQ and BIQ-E have demonstrated satisfactory reliability for the three scores in past studies, with reported alpha coefficient values ranging from .75 to .95 (Cash & Szymanski, 1995; Szymanski & Cash, 1995). In the current study, the alpha coefficient value for body satisfaction, as measured by the BIQ-E Weighted Discrepancy score, was .75 for women and .76 for men. The alpha coefficient value for perceived partner satisfaction with the respondent's body, as measured by the BIQ-E Weighted Discrepancy score, was .78 for women and .84 for men. The alpha coefficient value for actual partner satisfaction with the respondent's body, as measured by the adapted BIQ-E Weighted Discrepancy score, was .76 for women and .81 for men.

The Body-Esteem Scale for Adolescents and Adults (BESAA; Mendelson, Mendelson, & White, 2001) assesses participants' attitudes and feelings about their body and appearance. Only the 10-item Appearance subscale (BE-Appearance), which assesses general satisfaction with overall appearance, was used; because items on this subscale assess general satisfaction with appearance, they are applicable to both genders. Participants indicate their degree of agreement with each item on a 5-point response scale (0 = *never* to 4 = *always*). Negatively keyed items were reverse scored and items were added together to create a total score; higher scores reflect higher body satisfaction. Sample items are "I like what I look like in pictures" and "I think I have a good body."

Mendelson and colleagues (2001) provide factor analytic data to support the construct validity of the BESAA. Further, they report alpha coefficient values for the BE-Appearance subscale of .93 for women and .89 for men, and a three-month test-retest reliability of .89. In the current sample, the alpha coefficient value for the BE-Appearance subscale was .93 for women and .87 for men.

Minor changes to the BE-Appearance subscale also permitted its use as a measure of perceived and actual partner satisfaction with the respondent's body. For example, the original item "I like what I look like in pictures" was changed to "My partner likes what I look like in pictures" (perceived partner satisfaction) and "I like what my partner looks like in pictures" (actual partner satisfaction). In the current study, the alpha coefficient value for perceived partner satisfaction with the respondent's body, as measured by the modified BE-Appearance subscale, was .90 for women and .87 for men. The alpha coefficient value for actual partner satisfaction with the respondent's body, as measured by the modified BE-Appearance subscale, was .85 for women and .87 for men.

In summary, two measures of body satisfaction were included in the current study. The BIQ-E is an investment-weighted measure of satisfaction with specific aspects of appearance, whereas the BE-Appearance subscale of the BESAA is a measure of satisfaction with overall appearance.

Sexual satisfaction. The New Sexual Satisfaction Scale (NSSS; Stulhofer, Busko, & Brouillard, 2010) is a 20-item measure that assesses respondents' degree of satisfaction with their sex life in the past six months. Items are presented on a 5-point scale (1 = *not at all satisfied* to 5 = *extremely satisfied*). The NSSS is multidimensional and includes a 10-item Ego-Focused subscale (NSSS-E) that focuses on personal experiences and sensations, as well as a 10-item Partner and Activity-Focused subscale that focuses on partner's behaviours and sexual activity. Only the NSSS-E subscale was used in the analyses. NSSS-E items were added together to create a total score, and higher scores reflect higher levels of sexual satisfaction. Sample items include "The way

I sexually react to my partner" and "My 'letting go' and surrender to sexual pleasure during sex."

The NSSS-E subscale has demonstrated excellent reliability in previous studies, with alpha coefficient values ranging from .91 to .93 for both women and men among various samples (Stulhofer et al., 2010). One-month test-retest reliability coefficients of .84 and .72 have been reported for women and men, respectively (Stulhofer et al., 2010). In the current study, the alpha coefficient value for the NSSS-E subscale was .90 for women and .88 for men.

The Global Measure of Sexual Satisfaction (GMSEX) is a subscale of the Interpersonal Exchange Model of Sexual Satisfaction (Lawrance & Byers, 1995) that measures overall sexual satisfaction with one's partner. Five items are presented on 7-point dimensions: *good-bad*, *pleasant-unpleasant*, *positive-negative*, *satisfying-unsatisfying*, and *valuable-worthless*. Items were added together to create a total score, and higher scores reflect higher levels of sexual satisfaction.

The GMSEX subscale has demonstrated high internal consistency in past research, with alpha coefficient values of .90 and over being reported (Byers, 2005; Lawrance & Byers, 1995). Additionally, test-retest reliability coefficients of .84 at two-week follow-up (Lawrance & Byers, 1995), .78 at three-month follow-up (Byers & McNeil, 2006), and .61 at 18-month follow (Byers & MacNeil, 2006) have been reported. In the current study, the alpha coefficient value for the GMSEX subscale was .88 for women and .95 for men.

In summary, two measures of sexual satisfaction were used in the current study. Both measures are based in theory and equally applicable to both genders. The GMSEX

subscale is a global measure of sexual satisfaction that enjoys more widespread use, but it is often limited by ceiling effects (i.e., restricted range of responses). The NSSS is a newer measure that has the potential to provide more specific information about sexual satisfaction and a greater range of responses, when used in combination with the GMSEX subscale. A recent article comparing sexual satisfaction measures recommended the use of the GMSEX subscale and a short version of the NSSS over the widely used Index of Sexual Satisfaction (Hudson, 1998; Hudson et al., 1981) on the basis of better psychometric properties (Mark, Herbernick, Fortenberry, Sanders, & Reece, 2014).

Relationship satisfaction. The 32-item Couples Satisfaction Index (CSI; Funk & Rogge, 2007) is a relatively new measure that assesses global, subjective evaluations of romantic relationship satisfaction. Participants respond to items rated on different response scales; one global item is measured on a 7-point scale whereas the other 31 items are measured on 6-point scales using various response anchors. Negatively keyed items were reversed scored and items were added together to create a total score; higher scores reflect higher levels of relationship satisfaction. Sample items are "My relationship with my partner makes me happy" (0 = *not at all true* to 5 = *completely true*) and "How well does your partner meet your needs?" (0 = *not at all* to 5 = *completely*). Unlike many measures that were designed to assess marital satisfaction, such as the Marital Adjustment Test (Locke & Wallace, 1959), the CSI was designed to assess relationship satisfaction across different types of romantic dyads.

The CSI was developed by pooling items from eight well-validated measures of relationship satisfaction, then applying item response theory and principal components analysis to the item pool. As a result, the CSI has strong convergent validity with the

most commonly used measures of relationship satisfaction, while demonstrating greater

precision of measurement and, therefore, greater power for detecting group differences

(Funk & Rogge, 2007). A recent meta-analysis assessing the reliability of various

relationship satisfaction measures reported that the average alpha coefficient value

produced by the CSI across studies was .94 (Graham et al., 2011). In the current sample,

the alpha coefficient value was .96 for women and .95 for men.

CHAPTER III

Results

Overview of Analyses

Prior to conducting analyses, statistical assumptions for structural equation modelling (SEM) and dyadic analyses were verified and problems related to missing data and outliers were addressed. SPSS 22.0 and MPlus 7.2 were used to conduct analyses. Descriptive statistics were calculated for all major study variables and possible covariates. Potential gender differences on these variables were assessed using Wilcoxon-Sign Ranked tests, and potential differences based on recruitment method were assessed using Mann-Whitney U tests. Hypotheses 1 through 6 assessed associations between pairs of variables, and were tested using the APIM for distinguishable dyads. Hypothesis 7 assessed the mediation model, and was tested using the APIMeM and bias-corrected bootstrapping. In order to provide evidence of the robustness of the findings, the APIMeM was assessed while controlling for potentially confounding variables, and alternatives to the hypothesized APIMeM were tested. With respect to the subsidiary hypotheses, hypothesis 8 was tested using an APIM, and hypothesis 9 was tested using Friedman's test of differences. Finally, exploratory APIMs were conducted to examine whether body satisfaction, perceived partner satisfaction with the respondent's body, and actual partner satisfaction with the respondent's body were associated with relationship variables.

Power Analyses

Power is a ubiquitous concern for studies using dyadic analyses and, because it is so difficult to recruit couples in large numbers, most dyadic studies lack sufficient power to detect the partner effects that are central to dyadic research (Ackerman et al., 2011;

Kenny et al., 2006). Note that the current sample of 251 couples far surpasses the

number of couples typically included in dyadic research ($N = 80$; Kenny et al., 2006) and

allows for significantly improved power to detect anticipated effects. Nevertheless, two

power analyses were conducted, one to assess the number of couples required to detect a

good fitting model for the final mediation hypothesis (hypothesis 7), and a second

analysis to assess the number of couples required to detect actor and partner effects

within the APIMs (hypotheses 1 through 6).

The power analysis for the final mediation model was performed using Gnambs'

(2013) calculator, which is based on the Root Mean Square Error of Approximation

(RMSEA) fit index and MacCallum and colleagues' (1996) guidelines. This approach

was recommended by D. L. Jackson (personal communication, March 13, 2014). Alpha

was set at .05, power was set at .80, RMSEA H_0 was set at .05, and RMSEA H_1 was set at

.10. The final model with 14 degrees of freedom (the model without control variables)

indicated that a minimum of 241 participants were required for the overall model to have

a good fit.

Power analyses for multiple regression can be used to determine the required

sample size for APIMs (Kenny & Cook, 1999). Accordingly, G*Power 3 (Faul,

Erdfelder, Buchner, & Lang, 2009) was used to determine the sample size required for

hypotheses 1 through 6. Ackermann and colleagues (2011) note that sample size

estimations should, ideally, be based on the expected size of partner effects, which are

often half the size of actor effects. Therefore, the required sample size in order to

determine a small effect ($f^2 = .05$) was calculated by setting alpha at .05 and power at .80.

For APIMs without any control variables, there are two predictors in the model, and a

minimum sample size of 196 couples is required. For APIMs with one control variable

(i.e., four predictors in the model), a sample size of 244 couples would be required. For

APIMs with two control variables (i.e., six predictors in the model), a minimum of 279

couples would be required. APIMs with three control variables (i.e., eight predictors in

the model) would require 309 couples.

Thus, the current sample of 251 couples was judged to be sufficient to detect a

good fitting model for the APIMeM, as well as to detect actor and partner effects within

the APIMs, provided that control variables were tested one at a time, rather than

altogether.

Treatment of Missing Data

An SPSS Missing Values Analysis was used to examine missing data patterns.

Overall, the amount of missing data was very low (i.e., 0.55% of the total data set was

missing). Participants were more likely to skip or miss one or more items on a multi-item

questionnaire, than to fail to complete an entire questionnaire.

For survey items that did have missing data, the percentage of missing data

ranged from 0.2% to 3.6%. Analyses were performed to determine whether the missing

data were missing completely at random (MCAR), missing at random (MAR), or missing

not at random (MNAR). Little's test was significant ($\chi^2 = 35370.81, p < .001$) suggesting

that data were not MCAR. Therefore, t-tests for variables missing greater than 1% of

data were conducted to determine whether the data were MAR or MNAR. Results

showed that the missing data on identified variables could be predicted from variables

other than the outcome variable, suggesting that the data was MAR (Tabachnick &

Fidell, 2007).

Full information maximum likelihood (FIML) is often used to handle missing data in SEM. However, FIML is not an ideal procedure for addressing the type of item-level missing data found in the current data set (D. Jackson, personal communication, April 7, 2015; Enders, 2010). Although multiple imputation is better suited to addressing item-level missing data, a major disadvantage of this approach is that there are not yet procedures for pooling SEM fit indices (e.g., Comparative Fit Index) other than the chi-square (Enders, 2010). Accordingly, the expectation-maximization (EM) method, available through SPSS, was used to estimate missing data. 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). EM is superior to other common methods of handling missing data, such as listwise deletion, pairwise deletion, and mean substitution (Kline, 2011). Although there are some concerns about biased standard errors when using the EM method available through SPSS, its use is appropriate when less than 5% of data are missing (Scheffer, 2002; Tabachnick & Fidell, 2007). Furthermore, with very small amounts of missing data, results are unlikely to be affected regardless of the method of handling missing data that is employed (D. Jackson, personal communication, April 29, 2015; Kline, 2011).

Statistical Assumptions

Prior to conducting analyses, all major study variables and possible covariates were checked to ensure that statistical assumptions were met.

Normality and treatment of outliers. Screening for outliers was done separately

for women and men as analyses for distinguishable dyads, described in greater detail

below, treat their data as separate variables. SEM analyses assume that each observed

variable is normally distributed (univariate normality) and that all observed variables

jointly are normally distributed (multivariate normality). The assumption of multivariate

normality is more likely to be met if there is univariate normality. Univariate normality

of all measured predictor and outcome variables was assessed using Kolmogorov-

Smirnov tests and by examining skewness and kurtosis values. Standardized scores

greater than the absolute score of 3.29 were used to identify univariate outliers.

Univariate outliers on these variables were converted to the next most extreme score that

was within 3.29 standard deviations of their mean (Fields, 2005; Kline, 2011). Given that

there was still evidence of nonnormality for some variables, procedures that account for

this nonnormality (i.e., bootstrapping, the Satorra-Bentler scaled chi-square and standard

errors) were used during hypothesis testing.

Cook's distance, using a cut-off value of 1, did not identify any influential

observations. Mahalanobis distance values identified nine multivariate outliers; two of

the female and male outliers were partnered with each other, resulting in a total of eight

multivariate outlier dyads (16 individuals). The multivariate outlier dyads were similar to

dyads included in the final sample with respect to their demographic information. For

example, all eight outlier couples were recruited through the pool, and indicated that they

were "seriously dating" and had no children. Additionally, 81% ($n = 13$) of these outliers

identified as "White or European-Canadian" and 94% ($n = 15$) identified as

"heterosexual." Multivariate outlier dyads were also similar to dyads included in the

final sample with respect to their mean scores on all major study variables and potential

covariates except for depression and relationship satisfaction (i.e., the outlier dyads were,

on average, more depressed and less satisfied with their relationship than dyads included

in the final sample). As already noted in the Method section (see page 54), these eight

couples were excluded from the sample because their inclusion in the data set affected

final results.

Linearity and homoscedasticity. Linearity and homoscedasticity assumptions

were assessed by scanning bivariate matrix scatterplots. Data that are distributed in a

straight line indicate that the linearity assumption is met, and uniform distribution of the

plot of data points indicates that the homoscedasticity assumption is met. All observed

variables appeared to be linearly related, if related at all. Although there were minor

violations in homoscedasticity, the analyses are robust to this.

Multicollinearity and singularity. Multicollinearity occurs when variables are

very highly correlated and singularity occurs when variables are redundant. Correlation

matrices, examined separately by gender, revealed that there were no correlations greater

than or equal to .9 between variables. All tolerance values were greater than .10 and

variance inflation factor values were below 10.0, further indicating an absence of

multicollinearity. Because the program converged in MPlus, the covariance was assumed

to be nonsingular (Tabachnick & Fiddell, 2007).

Relative variances. Covariance matrices in which the ratio of the largest to

smallest variance is large (greater than 10.0) can cause convergence problems (Kline,

2011). The covariance matrix was found to be ill-scaled in the current data set.

Therefore, variables with extremely high or low variances were rescaled by multiplying

their scores by a constant. After this rescaling, the ratio of the largest to smallest variance was 5.04.

Tests of nonindependence. Standard statistical methods, such as multiple regression analysis, assume that participant scores on the outcome variable are unrelated. In contrast, dyadic data analyses assume that the partners' outcome variables are linked to one another (i.e., they are nonindependent). Two-tailed Pearson product-moment correlation coefficients were used to test for nonindependence between dyad members' scores on the outcome variables. Interdyad correlations on sexual satisfaction and relationship satisfaction were moderate to large in effect size and statistically significant (see Table 5), supporting the notion that dyads, rather than individuals, should be the unit of analysis in the subsequent statistical analyses (Kenny et al., 2006).

Empirical test of distinguishability. Within the APIM framework, dyad members are considered theoretically distinguishable when they can be identified by a nonarbitrary categorical variable (e.g., heterosexual partners) and indistinguishable when they cannot be identified by such a variable (e.g., same-sex roommates, identical twins). Although dyad members in the current study were conceptually distinguishable based on gender, it is recommended that this assumption be empirically tested because different analyses are conducted for distinguishable versus indistinguishable dyads (Ackerman et al., 2011; Kenny et al., 2006). Accordingly, an omnibus test of distinguishability was conducted for the final mediation model, following the guidelines provided by Ackerman and colleagues (2011). The omnibus test of distinguishability involves constraining women and men's means, variances, intrapersonal covariances, and interpersonal covariances to equality within the model. After imposing these constraints, model fit

revealed a rejectable chi-square value: χ^2 (22) $= 256.038$, $p < .001$. Next, gender equality

constraints on the means were removed, as mean differences are not of primary concern

in the APIM, and the test of distinguishability was conducted once more (Ackerman et

al., 2011). Again, a rejectable chi-square value was obtained, χ^2 (18) $= 147.430$, $p < .001$,

indicating that treating women and men as indistinguishable did not fit the data well.

Therefore, there is both theoretical and empirical support for using analyses that treat

dyads in the current sample as distinguishable.

Descriptive Statistics

Table 2 provides the mean, standard deviation, and range of scores for all major

study variables and possible covariates.

Table 2

Descriptive Statistics for Major Study Variables and Possible Covariates

Variable	Women (*N* = 251)			Men (*N* = 251)			Potential range
	M	*SD*	Actual range	*M*	*SD*	Actual range	
Relationship duration	29.20	19.70	4.50-95.30	29.20	19.70	4.50-95.30	
Age	20.81	2.43	18.00-28.69	21.64	2.73	17.00-29.00	
Body mass index	22.80	3.67	15.81-35.82	24.70	3.78	12.80-37.31	
Self-esteem	20.83	5.18	10.00-30.00	22.12	5.04	10.00-30.00	10.00-40.00
Social desirability	6.21	2.88	0.00-12.00	6.55	2.88	0.00-13.00	0.00-13.00
Depression	12.08	9.31	0.00-46.49	10.43	8.54	0.00-41.18	0.00-60.00
Body satisfaction (BE-Appearance)	23.78	7.70	1.00-39.00	27.91	6.45	7.00-40.00	0.00-40.00
Body satisfaction (BIQ-E)	1.48	1.20	-1.64-5.73	.94	1.11	-2.27-4.91	-3.00-9.00
Perceived partner satisfaction with respondent's body (BE-Appearance)	34.06	5.21	14.71-40.00	32.78	5.56	14.75-40.00	0.00-40.00
Perceived partner satisfaction with respondent's body (BIQ-E)	.35	.99	-2.26-4.22	.39	1.08	-2.36-4.23	-3.00-9.00

Actual partner satisfaction with respondent's body (BE-Appearance)	35.84	4.06	21.80-40.43	35.86	4.68	19.15-40.00	0.00-40.00
Actual partner satisfaction with respondent's body (BIQ-E)	.17	.84	-2.98-2.55	-.08	.98	-2.45-3.45	-3.00-9.00
Sexual satisfaction (GMSEX)	31.65	4.01	17.86-35.48	31.68	4.26	15.75-35.00	5.00-35.00
Sexual satisfaction (NSSS-E)	39.36	6.87	18.00-50.00	42.51	5.62	23.26-50.00	10.00-50.00
Relationship satisfaction	136.61	20.17	64.20-161.00	135.96	19.11	65.13-161.00	0.00-161.00

Note. BE-Appearance = Body-Esteem Scale for Adolescents and Adults, Appearance subscale; BIQ-E = Body-Image Ideals Questionnaire-Expansion; GMSEX = Interpersonal Exchange Model of Sexual Satisfaction, Global Measure of Sexual Satisfaction subscale; NSSS-E = New Sexual Satisfaction Scale, Ego-Centered subscale.

Comparisons based on gender. Women and men were compared on major study variables and potential covariates (see Table 3). Dependent samples *t*-tests are typically used in order to make these comparisons in couples research due to the interdependence between partners' reports. However, because several variables were not normally distributed, Wilcoxon sign-ranked tests, the nonparametric equivalent of the dependent samples *t*-test, were conducted and medians, rather than the means, are reported.

Male participants were significantly older and had significantly higher BMIs than female participants. Compared to women, men reported significantly higher levels of self-esteem, body satisfaction (on both measures), and sexual satisfaction (as measured by the NSSS-E). Women reported significantly higher perceived partner satisfaction with the respondent's body (as measured by the BE-Appearance) and higher levels of depression than men, although the latter effect was only marginally significant. There were no gender differences with respect to social desirability, actual partner satisfaction with the respondent's body (on both measures), perceived partner satisfaction with respondent's body (as measured by the BIQ-E), sexual satisfaction (as measured by the GMSEX), and relationship satisfaction.

Table 3

Wilcoxon Sign-Ranked Tests Comparing Gender Differences on Study Variables and Possible Covariates

Variable	Women (N = 251)	Men (N = 251)	Z	p (two-tailed)	r
	Mdn	*Mdn*			
Age	20.00	21.00	-7.341	.000	-.33
Body mass index	22.15	24.41	-6.355	.000	-.28
Self-esteem	21.00	22.00	-2.919	.004	-.13
Social desirability	7.00	7.00	-1.399	.162	
Depression	10.00	9.00	1.957	.050	.12
Body satisfaction (BE-Appearance)	25.00	28.00	-6.959	.000	-.31
Body satisfaction (BIQ-E)	1.45	.82	5.726	.000	.26
Perceived partner satisfaction with respondent's body (BE-Appearance)	35.00	34.00	2.741	.006	.12
Perceived partner satisfaction with respondent's body (BIQ-E)	.18	.18	.094	.925	
Actual partner satisfaction with respondent's body (BE-Appearance)	37.00	37.00	-.609	.542	
Actual partner satisfaction with respondent's body (BIQ-E)	.18	.09	.322	.748	
Sexual satisfaction (GMSEX)	33.00	33.00	.217	.828	
Sexual satisfaction (NSSS-E)	40.00	42.00	-6.707	.000	-.30
Relationship satisfaction	142.00	140.00	.793	.428	

Note. BE-Appearance = Body-Esteem Scale for Adolescents and Adults, Appearance subscale; BIQ-E = Body-Image Ideals Questionnaire-Expansion; GMSEX = Interpersonal Exchange Model of Sexual Satisfaction, Global Measure of Sexual Satisfaction subscale; NSSS-E = New Sexual Satisfaction Scale, Ego-Centered subscale.

Comparisons based on recruitment method. Couples recruited from the Psychology Participant Pool were compared with couples recruited from the community on major study variables and potential covariates (see Table 4). In order to make such comparisons, for each variable, an average score was computed for the couple. This average score was then compared for couples based on their recruitment method. Because several variables were not normally distributed, Mann-Whitney U tests, which are the nonparametric equivalent of independent samples t-tests, were conducted and medians, rather than means, are reported.

Couples recruited from the community were significantly older than couples recruited through the pool, and the age difference between the two samples represented a moderate effect size. Additionally, couples recruited through the community reported significantly less satisfaction with their partner's appearance on the BIQ-E than couples recruited through the community, although the size of this effect was small. There were no significant differences based on recruitment method for any of the other variables.

Bivariate correlations. Bivariate correlations are presented in Table 5. Correlations between study variables for female participants are reported above the diagonal, correlations for male participants are reported below the diagonal, and inter-partner correlations are reported along the diagonal. For both women and men in the current sample, observed associations between key study variables were consistent with expectations and provided preliminary support for proceeding with dyad-level analyses.

Table 4

Mann-Whitney U Tests Comparing Couples Based on Recruitment Method

Variable	Pool (N = 202) Mdn	Community (N = 49) Mdn	U	p (two-tailed)	r
Relationship duration	24.00	29.00	4295.50	.152	
Age	20.50	23.00	2648.50	.000	-0.32
Body mass index	23.28	24.24	4288.50	.148	
Self-esteem	21.50	22.00	4702.50	.590	
Social desirability	6.50	6.50	4913.00	.938	
Depression	10.50	11.50	4620.50	.473	
Body satisfaction (BE-Appearance)	26.94	26.50	4879.50	.880	
Body satisfaction (BIQ-E)	1.11	1.05	4681.00	.558	
Perceived partner satisfaction with respondent's body (BE-Appearance)	34.00	33.50	4574.50	.412	
Perceived partner satisfaction with respondent's body (BIQ-E)	.21	.27	4442.50	.268	

Actual partner satisfaction with respondent's body (BE-Appearance)	36.50	36.00	4510.50	.337	
Actual partner satisfaction with respondent's body (BIQ-E)	.23	.05	4043.40	.047	.13
Sexual satisfaction (GMSEX)	33.00	31.50	4138.50	.073	
Sexual satisfaction (NSSS-E)	81.00	79.00	4452.00	.277	
Relationship satisfaction	140.57	139.50	4722.50	.621	

Note. BE-Appearance = Body-Esteem Scale for Adolescents and Adults, Appearance subscale; BIQ-E = Body-Image Ideals Questionnaire-Expansion; GMSEX = Interpersonal Exchange Model of Sexual Satisfaction, Global Measure of Sexual Satisfaction subscale; NSSS-E = New Sexual Satisfaction Scale, Ego-Centered subscale

Table 5

Bivariate Correlations for Women, Men, and Dyad Partners

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Relationship duration	**1.00**	.11	.11	.04	.00	-.05	-.02	-.05	.03	.03	-.04	-.02	-.04	.05
2. Body mass index	.19**	**.20****	-.23***	.00	.19**	-.36***	.34***	-.22***	.16*	-.03	.09	-.05	.03	-.01
3. Self-esteem	.04	-.02	**.17****	.32***	-.52***	.66***	-.57***	.30***	-.31***	.11	-.06	.25***	.24***	.22***
4. Social desirability	.03	.03	.28***	**.18****	-.36***	.30***	-.34***	.29***	-.23***	.24***	-.07	.20**	.25***	.32***
5. Depression	-.05	.09	-.49***	-.25***	**.19****	-.40***	.36***	-.32***	.29***	-.18**	.13*	-.16**	-.13*	-.34***
6. Body satisfaction (BE-Appearance)	-.05	-.17**	.61***	.34***	-.45***	**.28****	-.52***	.46***	-.35***	.20**	-.29***	.23***	.30***	.27***
7. Body satisfaction (BIQ-E)	-.01	.14*	-.39***	-.25***	.31***	-.74***	**.21****	-.41***	.48***	-.22**	.24***	-.22***	-.24***	-.37***
8. Perceived partner satisfaction (BE-Appearance)	-.03	.02	.38***	.25***	-.17**	.46***	-.35***	**.21****	-.42***	.50***	-.26***	.26***	.26***	.46***
9. Perceived partner satisfaction (BIQ-E)	-.05	.08	-.28***	-.26**	.22***	-.42***	.49***	-.63***	**.30****	-.21**	.40***	-.20**	-.30***	-.43***
10. Actual partner satisfaction (BE-Appearance)	-.02	-.03	.31***	.16*	-.17**	.42***	-.23***	.28***	-.22***	**.17****	-.54***	.42***	.35***	.52***
11. Actual partner satisfaction (BIQ-E)	-.01	.07	-.28***	-.16**	.26***	-.15*	.36***	-.19**	.36***	-.60***	**.24****	-.33***	-.34***	-.44***
12. Sexual satisfaction (GMSEX)	-.12	-.09	.26***	.19**	-.15*	.23***	-.21**	.42***	-.28***	.43***	-.35***	**.39****	.66***	.54***
13. Sexual satisfaction (NSSS-E)	-.08	-.09	.28***	.16*	-.24***	.30***	-.24***	.42***	-.25***	.42***	-.34***	.64***	**.32****	.48***
14. Relationship satisfaction	-.03	-.04	.35***	.20**	-.20**	.32***	-.21**	.44***	-.27***	.56***	-.45***	.59***	.55***	**.50****

Note. Correlations for women are shown above the diagonal. Correlations for men are shown below the diagonal. Correlations between dyad members are shown along the diagonal in bold. BE-Appearance = Body-Esteem Scale for Adolescents and Adults, Appearance subscale; BIQ-E = Body-Image Ideals Questionnaire-Expansion; Perceived partner satisfaction = Perceived partner satisfaction with respondent's body; Actual partner satisfaction = Actual partner satisfaction with respondent's body; GMSEX = Interpersonal Exchange Model of Sexual Satisfaction, Global Measure of Sexual Satisfaction subscale; NSSS-E = New Sexual Satisfaction Scale, Ego-Centered subscale. $N = 251$. *$p < .05$. **$p < .01$. ***$p < .001$ (two-tailed).

Correlations for female participants. Among female participants, there were moderate to large correlations between body satisfaction and perceived partner satisfaction with the females' body. Women's body satisfaction showed small to moderate correlations with their sexual satisfaction and moderate correlations with their relationship satisfaction. Perceived partner satisfaction with the females' body showed small to moderate correlations with females' sexual satisfaction and moderate to large correlations with their relationship satisfaction.   Satisfaction with their male partner's body demonstrated moderate to large correlations with females' sexual satisfaction and relationship satisfaction. There were large correlations between women's sexual satisfaction and their relationship satisfaction.

Correlations for male participants. Among male participants, there were moderate to large correlations between body satisfaction and perceived partner satisfaction with the males' body. Men's body satisfaction showed small to moderate correlations with their sexual satisfaction and relationship satisfaction. Perceived partner satisfaction with the males' body showed small to moderate correlations with males' sexual satisfaction and relationship satisfaction. Satisfaction with their female partners' body demonstrated moderate to large correlations with males' sexual satisfaction and relationship satisfaction. There were large correlations between men's sexual satisfaction and their relationship satisfaction.

Inter-partner correlations. Significant inter-partner correlations indicate that couples' scores were interdependent, supporting the use of dyadic analyses. As was expected, the associations between individual-level variables (e.g., body satisfaction) were weaker than associations between couple-level variables (e.g., sexual satisfaction).

Small to moderate inter-partner associations were observed for body satisfaction ($r = .21$ to .28), perceived partner satisfaction with the respondent's body ($r = .21$ to .30), and actual partner satisfaction with the respondent's body ($r = .17$ to .24). There were moderate to large inter-partner correlations for sexual satisfaction ($r = .32$ to .39), and large inter-partner correlations for relationship satisfaction ($r = .50$).

Correlations between measures of the same construct. Body satisfaction, perceived partner satisfaction with the respondent's body, actual partner satisfaction with the respondent's body, and sexual satisfaction were each assessed using multiple measures in order to overcome the limitations of any one measure. Two measures of sexual satisfaction, the GMSEX and NSSS, were administered in the current study. Only the Ego Subscale of the NSSS (NSSS-E), which measures sexual satisfaction generated by personal experiences and sensations, was relevant for purposes of the current study. For both women and men, the GMSEX and NSSS-E were strongly correlated (rs = .66 and .64, respectively) and internally consistent ($\alpha = .73$ and .76, respectively). Therefore, they were combined into a sexual satisfaction composite variable by calculating the average of the standardized scores for the two scales; higher scores indicate higher levels of sexual satisfaction.

Two body image measures, the Appearance subscale of the BESAA (BE-Appearance) and the BIQ-E, were administered in the current study. These questionnaires were adapted so that each provided a measure of personal body satisfaction, perceived partner satisfaction with the respondent's body, and actual partner satisfaction with the respondent's body (i.e., satisfaction with partner's body). The two measures of personal body satisfaction correlated $r = -.52$ and $r = -.74$, for women and

men, respectively. The two measures of perceived partner satisfaction with the

respondent's body correlated $r = -.42$ and $r = -.63$ for women and men, respectively. The

two measures of actual satisfaction with the partner's body correlated $r = -.54$ and $r = -.60$ for women and men, respectively. Because the two body image measures were more

highly correlated for men than women and because correlations were not always large in

size, it did not make sense for these measures to be combined into composite variables.

Therefore, the BE-Appearance, which provides an overall measure of body satisfaction

and which is more widely used than the BIQ-E, was used to measure body satisfaction,

perceived partner satisfaction with the respondent's body, and actual partner satisfaction

with the respondent's body in all subsequent analyses.

    Potential covariates. Correlations between major study variables (i.e., body

satisfaction, perceived partner satisfaction with the respondent's body, sexual

satisfaction, and relationship satisfaction) and potential control variables (i.e.,

relationship duration, BMI, self-esteem, social desirability, depression, and actual partner

satisfaction with the respondent's body) were examined. Relationship duration was not

associated with any of the major study variables for either female or male participants.

As such, it was not included as a control variable during hypothesis testing. For women,

BMI was associated with body satisfaction and perceived partner satisfaction with the

respondent's body, whereas for men, BMI was only associated with body satisfaction.

BMI was unrelated to sexual satisfaction and relationship satisfaction for both genders.

Women's self-esteem was associated with all major study variables, except for

satisfaction with the male partner's body; men's self-esteem was associated with all

major study variables. Social desirability correlated with all major study variables for

both female and male respondents. Interestingly, associations with social desirability

were typically stronger for individual-level variables (e.g., body satisfaction) than couple-

level variables (e.g., sexual satisfaction). Depression was associated with all major study

variables for both genders. Similarly, actual partner satisfaction with the respondent's

body was associated with all major study variables for both genders.

Hypothesis Testing

As recommended by Kenny and colleagues (2006), all continuous variables were

standardized using means and standard deviations for the entire sample, prior to

conducting the main analyses. SEM analyses were conducted using MPlus. Model fit

was assessed using Kline's (2011) recommended approach. First, the Satorra-Bentler

chi-square value and its significance value are reported. The Satorra-Bentler chi-square

value is similar to the chi-square value, but it uses robust standard errors and corrected

model test statistics in order to account for nonnormality within the dataset (Kline, 2011).

A nonsignificant Satorra-Bentler chi-square statistic indicates a good fit between the

hypothesized model and the data. Next, the Root Mean Square of Approximation

(RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and the

Standardized Root Mean Square Residual (SRMR) are reported in order to provide

descriptive information about model fit. RMSEA values less than .05, CFI and TLI

values greater than .95, and SRMR values less than .05 indicate a good fitting model

(Geiser, 2013).

In addition to using the Satorra-Bentler chi-square value, bias-corrected

bootstrapping was used in the mediation analysis (i.e., the APIMeM) in order to correct

for violations of the normality assumption. One-tailed significance values are reported for hypothesized actor effects, partner effects, and indirect effects.

Hypothesized associations between pairs of variables. Hypotheses 1 through 6 were tested using the APIM for distinguishable dyads, which includes two predictor variables (female and male) and two outcome variables (female and male). The model provides separate but simultaneous estimates of actor and partner effects. As a reminder to the reader, an *actor effect* refers to the effect of an individual's predictor variable on their own outcome variable, whereas a *partner effect* refers to the effect of an individual's predictor variable on their partner's outcome variable. Note that effects are labelled by referring to the dyad member of the outcome variable; thus, a direct effect from women's predictor variable to men's outcome variable is referred to as the men's partner effect (Ledermann et al., 2011). Actor and partner effects were expected for the first, third, fourth, fifth and sixth hypotheses; for the second hypothesis, only actor effects were expected.

The standard APIM for distinguishable dyads is a saturated model with zero degrees of freedom; therefore, measures of model fit cannot be computed (Kenny et al., 2006; Sadler et al., 2011). For each APIM, the standard model was run and parameter estimates (i.e., actor effects, partner effects, correlations between predictor variables, correlations between the errors of the outcome variables) are reported. Next, in order to assess for gender differences in actor effects, women's and men's actor effects were constrained to be equal. These equality constraints provide the model with one degree of freedom, and therefore allow model fit measures to be computed. A chi-square difference test was then performed and the resulting loss of fit in the model was assessed,

with a statistically significant chi-square value indicating significant gender differences between women's and men's actor effects. The same process was repeated comparing women and men's partner effects.

        Hypothesis 1. *Higher levels of body satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).* Complete parameter estimates for this model are included in Figure 5.

Figure 5. Actor-partner interdependence model (APIM) of body satisfaction predicting relationship satisfaction. Standardized estimates are shown.
†*p* < .10. **p* < .05. ****p* < .001.

The actor effect between body satisfaction and relationship satisfaction was significant for women ($\beta = .227, p < .001$) and men ($\beta = .316, p < .001$). Women and men who were satisfied with their appearance were more likely to be satisfied with their relationship. Constraining the two actor effects to equality did not significantly worsen model fit: Satorra-Bentler $\chi^2_D (1) = 0.932, p = .335, CFI = 1.000, TLI = 1.003, RMSEA = 0.000, SRMR = 0.016$. This indicates that there was no statistically significant gender difference in the actor effect.

The partner effect between body satisfaction and relationship satisfaction was marginally significant for women ($\beta = .127, p = .055$) and significant for men ($\beta = .108, p = .029$). Women and men who were satisfied with their appearance were more likely to have partners who were satisfied with their relationship. Constraining the two partner effects to equality did not significantly worsen model fit: Satorra-Bentler $\chi^2_D (1) = 0.037, p = .848, CFI = 1.000, TLI = 1.049, RMSEA = 0.000, SRMR = 0.003$. This indicates that there was no statistically significant gender difference in the partner effect.

To summarize, hypothesis 1 was partially supported. For women, higher levels of body satisfaction were associated with higher levels of own and partner relationship satisfaction. For men, higher levels of body satisfaction were also associated with higher levels of own and partner relationship satisfaction, although the effect between men's body satisfaction and women's relationship satisfaction was only marginally significant. No gender differences were found.

Hypothesis 2. *Higher levels of body satisfaction would be associated with higher levels of perceived partner satisfaction with the respondent's body (actor effect).* Complete parameter estimates for this model are included in Figure 6.
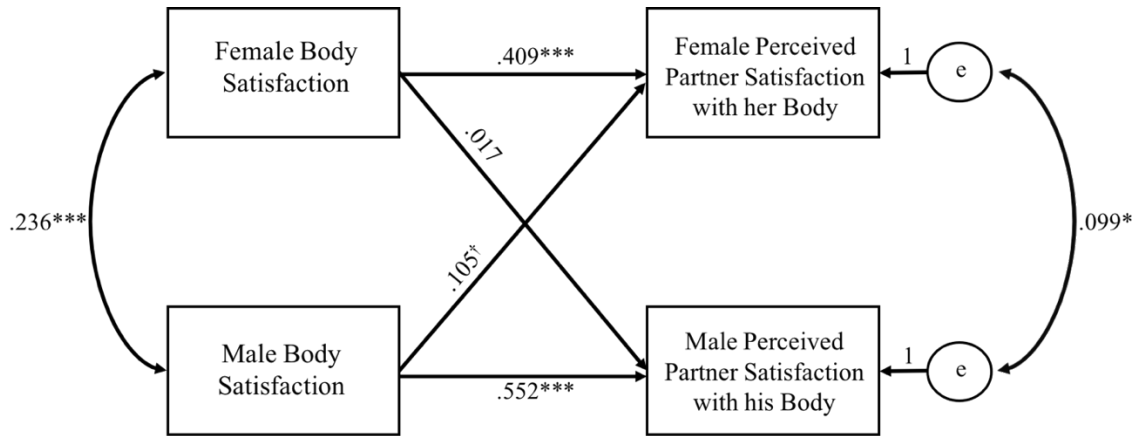
Figure 6. Actor-partner interdependence model (APIM) of body satisfaction predicting perceived partner satisfaction with the respondent's body. Standardized estimates are shown.
†p < .10. *p < .05. ***p < .001.

The actor effect between body satisfaction and perceived partner satisfaction with the respondent's body was significant for both women ($\beta = .409, p < .001$) and men ($\beta = .552, p < .001$). Female and male respondents who were satisfied with their bodies were more likely to perceive that their partners were also satisfied with the respondent's body. Constraining the two actor effects to equality did not significantly worsen model fit: Satorra-Bentler $\chi^2_D (1) = 2.161, p = .142$, CFI $= 0.990$, TLI $= 0.948$, RMSEA $= 0.068$, SRMR $= 0.029$. This indicates that there was no statistically significant gender difference in the actor effect.

The actor effect remained significant for women ($\beta = .332, p < .001$) and men ($\beta = .348, p < .001$) even when actual partner satisfaction with the respondent's body was included as a control variable. Female and male respondents who were satisfied with their own bodies were more likely to perceive their partners to be satisfied with the respondent's body, regardless of their partners' actual satisfaction with the respondent's body.

To summarize, hypothesis 2 was supported. For both women and men, higher levels of body satisfaction were associated with higher levels of perceived partner satisfaction with the respondent's body (actor effect), even after controlling for actual partner satisfaction with the respondent's body. No gender differences were found.

Hypothesis 3. *Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).* Complete parameter estimates for this model are included in Figure 7.
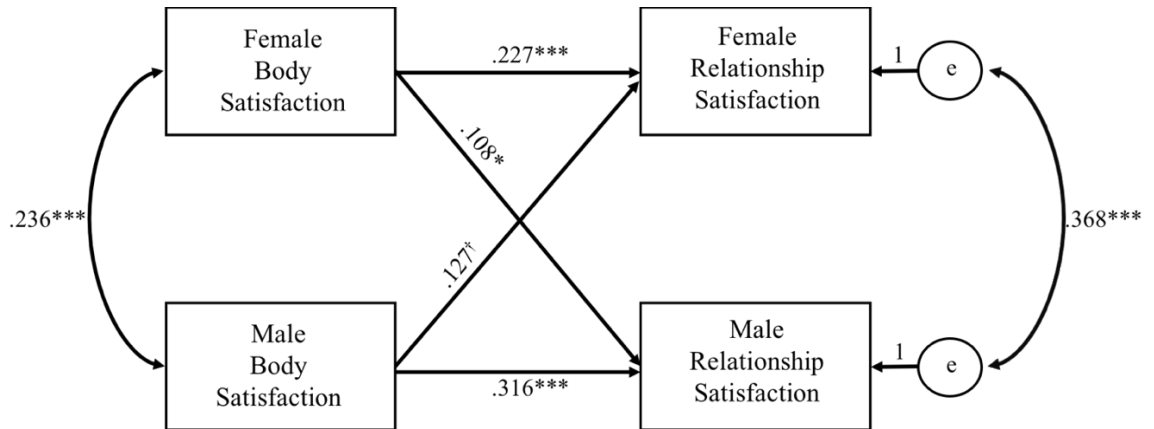
Figure 7. Actor-partner interdependence model (APIM) of perceived partner satisfaction with the respondent's body predicting sexual satisfaction. Standardized estimates are shown.
***p < .001.

The actor effect between perceived partner satisfaction with the respondent's body and sexual satisfaction was significant for both women ($\beta = .225, p < .001$) and men ($\beta = .391, p < .001$). Female and male respondents who perceived their partners to be satisfied with the respondent's body were more likely to be sexually satisfied. Constraining the two actor effects to equality significantly worsened model fit: Satorra-Bentler χ^2_D (1) $= 4.396, p = .036$, CFI $= 0.971$, TLI $= 0.854$, RMSEA $= 0.116$, SRMR $= 0.033$. This indicates that the association between perceived partner satisfaction with the respondent's body and own sexual satisfaction was significantly larger for men than for women.

The partner effect between perceived partner satisfaction with the respondent's body and sexual satisfaction was significant for both women ($\beta = .291, p < .001$) and men ($\beta = .239, p < .001$). Female and male respondents who perceived that their partners were satisfied with the respondent's body were more likely to have partners who were sexually satisfied. Constraining the two partner effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) $= 0.366, p = .545$, CFI $= 1.000$, TLI $= 1.027$, RMSEA $= 0.000$, SRMR $= 0.010$. This indicates that there was no statistically significant gender difference in the partner effect.

To summarize, hypothesis 3 was supported. For both female and male respondents, higher levels of perceived partner satisfaction with the respondent's body were associated with higher levels of own and partner sexual satisfaction. However, the actor effect was significantly larger for men than for women.

Hypothesis 4. *Higher levels of sexual satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship*

satisfaction (partner effect). Complete parameter estimates for this model are included in

Figure 8.

Figure 8.   Actor-partner interdependence model (APIM) of sexual satisfaction predicting relationship satisfaction. Standardized estimates are shown.
**p* < .01. ***p* < .001.

The actor effect between sexual satisfaction and relationship satisfaction was significant for both women (β = .477, p < .001) and men (β = .580, p < .001). Female and male respondents who were sexually satisfied were more likely to be satisfied with their relationship. Constraining the two actor effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) = 1.348, p = .246, CFI = 0.998, TLI = 0.991, RMSEA = 0.037, SRMR = 0.020. This indicates that there was no statistically significant gender difference in the actor effect.

The partner effect between sexual satisfaction and relationship satisfaction was significant for women (β = .176, p = .002), but was not significant for men (β = .043, p = .215). Women's sexual satisfaction was unrelated to their male partner's relationship satisfaction, but men's sexual satisfaction was positively associated with their female partner's relationship satisfaction.

To summarize, hypothesis 4 was only partially supported. For both women and men, higher levels of sexual satisfaction were associated with higher levels of own relationship satisfaction, and there were no significant gender differences. However, higher levels of sexual satisfaction were associated with higher levels of partner relationship satisfaction only for men.

Hypothesis 5. *Higher levels of body satisfaction would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).* Complete parameter estimates for this model are included in Figure 9.
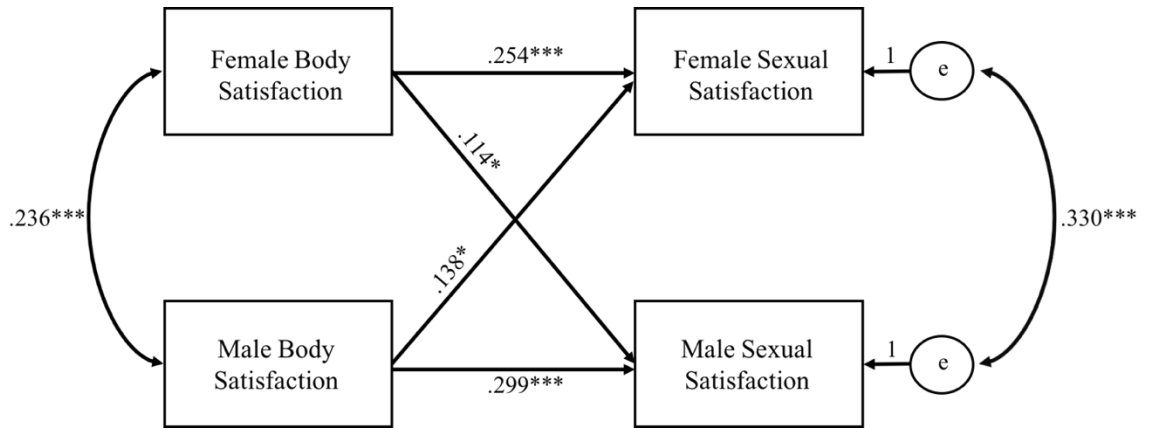
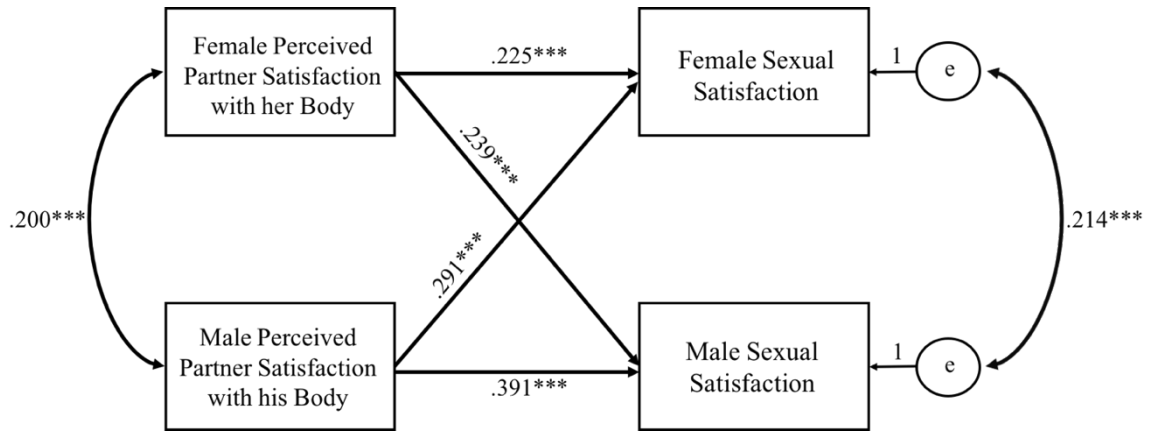*Figure 9.* Actor-partner interdependence model (APIM) of body satisfaction predicting sexual satisfaction. Standardized estimates are shown.
p < .05. ***p* < .001.

The actor effect between body satisfaction and sexual satisfaction was significant for both women (β = .254, p < .001) and men (β = .299, p < .001). Female and male respondents who were satisfied with their appearance were more likely to be sexually satisfied. Constraining the two actor effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) = 0.210, p = .647, CFI = 1.000, TLI = 1.045, RMSEA = 0.000, SRMR = 0.008. This indicates that there was no statistically significant gender difference in the actor effect.

The partner effect between body satisfaction and sexual satisfaction was significant for both women (β = .138, p = .033) and men (β = .114, p = .021). Female and male respondents who were satisfied with their appearance were more likely to have partners who were sexually satisfied. Constraining the two partner effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) = 0.058, p = .809, CFI = 1.000, TLI = 1.054, RMSEA = 0.000, SRMR = 0.004. This indicates that there was no statistically significant gender difference in the partner effect.

To summarize, hypothesis 5 was supported. For both women and men, higher levels of body satisfaction were associated with higher levels of own and partner sexual satisfaction. No gender differences were found.

Hypothesis 6. *Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).* Complete parameter estimates for this model are included in Figure 10.
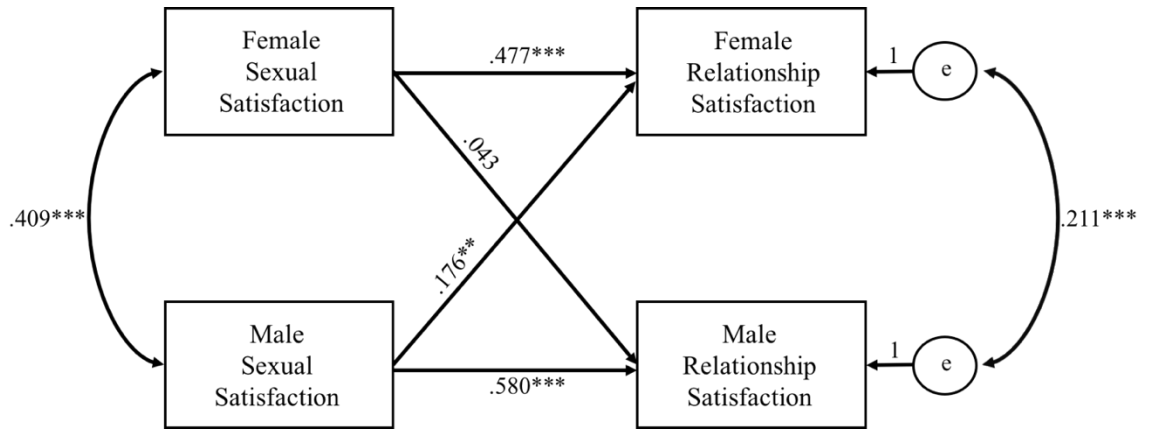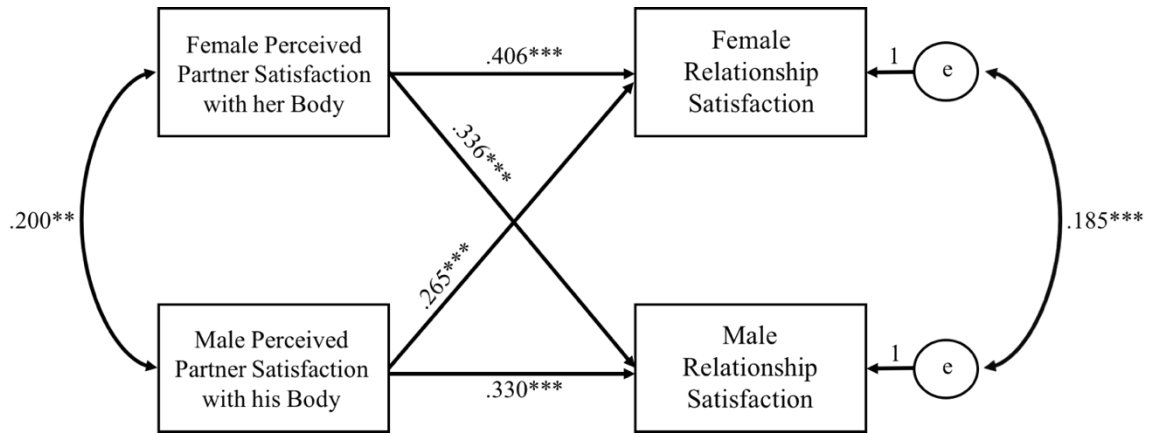
Figure 10. Actor-partner interdependence model (APIM) of perceived partner satisfaction with the respondent's body predicting relationship satisfaction. Standardized estimates are shown.
**p < .01. ***p < .001.

The actor effect between perceived partner satisfaction with the respondent's body and relationship satisfaction was significant for both women ($\beta = .406$, $p < .001$) and men ($\beta = .330$, $p < .001$). Female and male respondents who perceived their partners to be satisfied with the respondent's body were more likely to be satisfied with their relationship. Constraining the two actor effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) = 0.683, $p = .408$, CFI = 1.000, TLI = 1.012, RMSEA = 0.000, SRMR = 0.016. This indicates that there was no statistically significant gender difference in the actor effect.

The partner effect between body satisfaction and sexual satisfaction was significant for both women ($\beta = .265$, $p < .001$) and men ($\beta = .336$, $p < .001$). Female and male respondents who perceived their partners to be satisfied with the respondent's body were more likely to have partners who were satisfied with their relationship. Constraining the two partner effects to equality did not significantly worsen model fit: Satorra-Bentler χ^2_D (1) = 0.624, $p = .430$, CFI = 1.000, TLI = 1.014, RMSEA = 0.000, SRMR = 0.014. This indicates that there was no statistically significant gender difference in the partner effect.

To summarize, hypothesis 6 was supported. For both women and men, higher levels of perceived partner satisfaction with the respondent's body were associated with higher levels of own and partner relationship satisfaction. No gender differences were found.

Hypothesized mediation model. The APIMeM (Ledermann et al., 2011) is an extension of the APIM that allows for the assessment of mediation with dyadic data. Hypothesis 7 tested a two-mediator, three-path mediation model. Within a two-mediator

APIMeM, eight types of indirect effects are possible for each outcome variable (i.e., women's relationship satisfaction and men's relationship satisfaction): actor-actor-actor effects, actor-partner-actor effects, actor-actor-partner effects, partner-actor-actor effects, partner-partner-partner effects, partner-actor-partner effects, actor-partner-partner effects, and partner-partner-actor effects. Recall that an actor effect refers to a path between two variables for the same person, whereas a partner effect involves a path between variables for two different people.

The APIMeM was assessed in several stages. First, the path coefficients and significance values for all actor and partner direct effects (i.e., relationships between all predictor, mediator, and outcome variables) were assessed in the unconstrained (i.e., saturated) APIMeM for distinguishable dyads. Second, the model was tested for complete indistinguishability (gender equality constraints imposed on all direct effects) and the fit of the constrained and unconstrained models was compared. Third, bias-corrected bootstrapping was used to test for the significance of indirect effects. Fourth, the model was tested while controlling for a number of potentially confounding variables. Finally, alternative models were tested.

Hypothesis 7. *Perceived partner satisfaction with the respondent's body and sexual satisfaction would mediate the association between body satisfaction and relationship satisfaction.* Although eight types of mediated effects are possible for each outcome variable (i.e., women's relationship satisfaction and men's relationship satisfaction), only the two types of mediated effects that were most relevant for purposes of the current study were hypothesized. The first mediated effect explains the association between own body satisfaction and own relationship satisfaction, whereas the second

mediated effect explains the association between own body satisfaction and partner relationship satisfaction.

Actor-actor-actor indirect effects. The association between own body satisfaction and own relationship satisfaction would be mediated by perceived partner satisfaction with the respondent's body and own sexual satisfaction. This effect is a mediational path that involves three actor effects.

Actor-partner-actor indirect effects. The association between own body satisfaction and partner relationship satisfaction would be mediated by perceived partner satisfaction with the respondent's body and partner sexual satisfaction. This effect is a mediational path that involves an actor effect, followed by a partner effect, followed by another actor effect.

Model selection and fit. Following Ledermann and Macho (2009), a partial mediation model (i.e., a model with direct effects from predictor to outcome variables) was first tested. If the standardized coefficients of the direct effects from predictor to outcome variables are less than .10 and nonsignificant, Ledermann and Macho (2009) recommend removing these paths, suggesting complete mediation; complete meditation models generally have more power to detect mediation effects than partial mediation models. In the partial mediation model, none of the four direct effects (two actor effects, two partner effects) between body satisfaction and relationship satisfaction were significant. Therefore, a complete mediation model (i.e., a model that did not include direct effects between body satisfaction and relationship satisfaction) was selected.

Next, the model was tested for complete indistinguishability (Ledermann et al., 2011). This involves comparing a distinguishable APIMeM in which women and men's

estimates are estimated separately with an indistinguishable APIMeM in which women

and men's estimates are pooled (i.e., gender equality constraints are imposed on all direct

effects). The distinguishable model fit the data well: χ^2 (4) = 4.525, p = .340, CFI =

0.999, TLI = 0.994, RMSEA = 0.023, SRMR = 0.011, AIC = 4942.977. The

indistinguishable model also fit the data well: χ^2 (14) = 19.434, p = .149, CFI = 0.991,

TLI = 0.982, RMSEA = 0.039, SRMR = 0.031, AIC = 4937.886. Chi-square difference

tests showed that gender equality constraints did not significantly decrease model fit: χ^2_D

(10) = 14.909, p = .135. According to Ledermann and colleagues (2011), if fit indices

indicate that constraints do not significantly decrease model fit and the fit of the

constrained model is good, then estimates of effects from the simpler, constrained model

should be used because this model has greater power to detect effects. Accordingly, the

indistinguishable APIMeM was retained. The greater power offered by the

indistinguishable APIMeM is even more important when control variables are added to

the model. However, it is important to note that there were no substantive changes to the

mediation results when running the distinguishable APIMeM versus the indistinguishable

APIMeM.[2]

    Direct effects. Complete parameter estimates for the model are shown in Figure

11. Body satisfaction significantly predicted perceived partner satisfaction with the

respondent's body (medium to large actor effect). Body satisfaction significantly

predicted own sexual satisfaction (small to medium actor effect), but not partner sexual

satisfaction. Perceived partner satisfaction with the respondent's body significantly

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[2] In the distinguishable APIMeM, actor-actor-actor and actor-partner-actor indirect effects were significant for both genders. Parameter estimates for the distinguishable APIMeM are provided in Appendix J.

predicted own sexual satisfaction (small to medium actor effect) and partner sexual satisfaction (small to medium partner effect). Perceived partner satisfaction with the respondent's body significantly predicted own relationship satisfaction (small to medium actor effect) and partner relationship satisfaction (small to medium partner effect). Sexual satisfaction significantly predicted own relationship satisfaction (medium to large actor effect), but not partner relationship satisfaction.

Figure 11. Actor-partner interdependence mediation model (APIMeM) in which perceived partner satisfaction with the respondent's body and sexual satisfaction completely mediate the association between body satisfaction and relationship satisfaction. Standardized estimates are shown. Correlations between predictor variables and errors of the outcome variables are not shown for the purpose of readability. **p < .01. ***p < .001.

Indirect effects. Bias-corrected bootstrapping was used to test whether indirect effects were significant. Bootstrapping is a resampling approach in which cases from the original data are randomly selected with replacement in order to generate a new (bootstrap) sample; this process is repeated many times and yields repeated estimates of the indirect effect. The bias-corrected bootstrap method corrects for nonnormality in the population. Mediation is tested by examining whether the confidence interval contains zero. The bias-corrected bootstrap approach to testing mediation has been shown to have greater power than the commonly used Sobel test (Fritz & MacKinnon, 2007).

Consistent with hypotheses, the actor-actor-actor indirect effect was significant (β = 0.052, 95% CI: 0.031, 0.081). This indicates that the association between own body satisfaction and own relationship satisfaction was completely mediated by perceived partner satisfaction with the respondent's body and own sexual satisfaction. In other words, body satisfaction predicted perceived partner satisfaction with the respondent's body; in turn, perceived partner satisfaction with the respondent's body predicted the respondent's own sexual satisfaction, which predicted the respondent's own relationship satisfaction.

Also consistent with hypotheses, the actor-partner-actor indirect effect (β = 0.051, 95% CI: 0.029, 0.084) was significant. This indicates that the association between own body satisfaction and partner relationship satisfaction was completely mediated by perceived partner satisfaction with the respondent's body and partner sexual satisfaction. In other words, body satisfaction predicted perceived partner satisfaction with the respondent's body; in turn, perceived partner satisfaction with the respondent's body predicted partner sexual satisfaction, which predicted partner relationship satisfaction.

Control variables. The same model was tested while controlling for actual

partner satisfaction with the respondent's body (see Figure 12). This model also fit the

data: χ^2 (20) = 29.647, p = .076, CFI = 0.988, TLI = 0.976, RMSEA = 0.044, SRMR =

0.031. More importantly, both actor-actor-actor (β = 0.022, p = .003, 95% CI: 0.049,

0.040) and actor-partner-actor (β = 0.020, p = .007, 95% CI: 0.007, 0.040) indirect effects

remained significant after controlling for this variable in the model. This indicates that

the association between body satisfaction and relationship satisfaction was explained by

perceived partner satisfaction with the respondent's body and sexual satisfaction,

regardless of actual partner satisfaction with the respondent's body. In other words, body

satisfaction predicted perceived partner satisfaction with the respondent's body,

regardless of actual partner satisfaction with the respondent's body; this perception

predicted (a) own sexual satisfaction, which predicted own relationship satisfaction and

(b) partner sexual satisfaction, which predicted partner relationship satisfaction.

Several other potentially confounding variables were tested to see if they

influenced results. Specifically, self-esteem, depression, social desirability, and BMI

were all tested within the model. These covariates were tested one at a time because

controlling for all four variables at once would have drastically reduced the model's

power. The model with BMI as a control variable was a poor fit to the data and,

therefore, parameter estimates were not interpreted. The models with self-esteem,

depression, and social desirability as control variables fit the data well. Importantly, the

main findings of interest (i.e., the hypothesized indirect effects) from these models did

not substantively change when controlling for these variables; in all cases, both the actor-

actor-actor indirect effects (range: β = 0.043 to 0.047) and actor-partner-actor indirect

effects (range: $\beta = 0.044$ to 0.046) remained significant, suggesting that these results
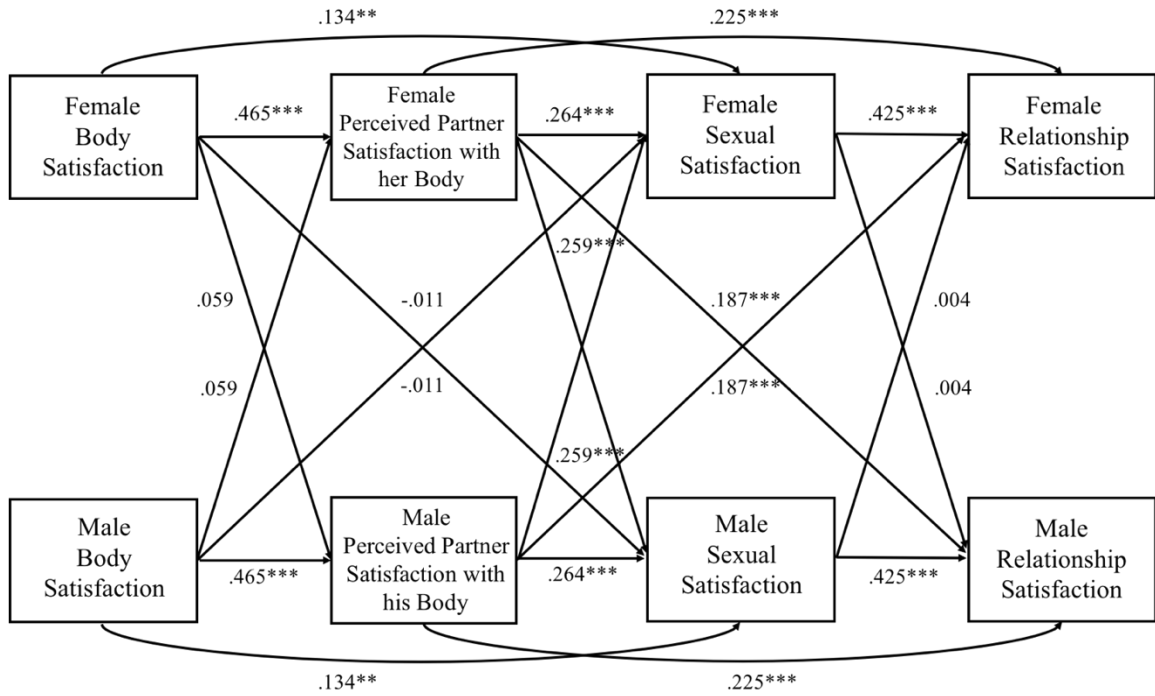
were quite robust.
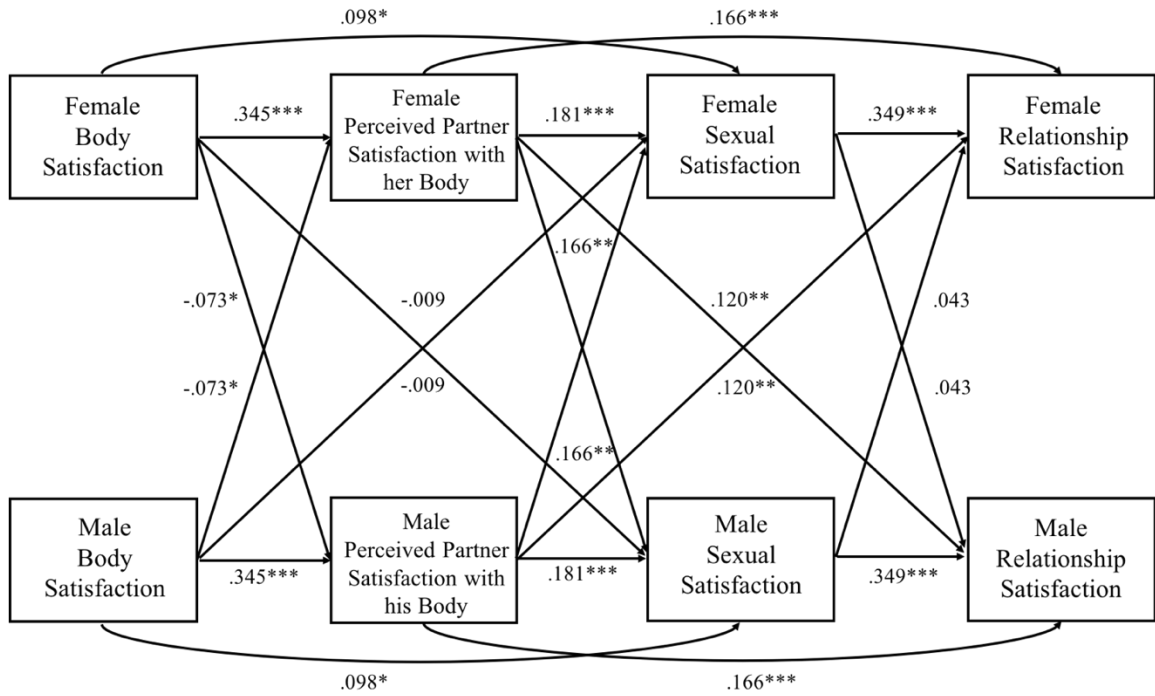
Figure 12. Actor-partner interdependence mediation model (APIMeM) in which perceived partner satisfaction with the respondent's body and sexual satisfaction completely mediate the association between body satisfaction and relationship satisfaction, controlling for actual partner satisfaction with the respondent's body. Standardized estimates are shown. Actual partner satisfaction with the respondent's body, and correlations between predictor variables and errors of the outcome variables are not shown for the purpose of readability.
p < .05. **p* < .01. ***p* < .001.

Alternative models. Five alternative models that reversed the order of key variables, and which seemed theoretically plausible, were considered. Each of these models was tested with and without direct effects between the predictor and outcome variables, resulting in a total of 10 alternative models tested. For example, one of the alternative models designated relationship satisfaction as the predictor variable, sexual satisfaction as the first mediator, perceived partner satisfaction with the respondent's body as the second mediator, and body satisfaction as the outcome variable (i.e., the order of variables in the hypothesized model was reversed).

A summary of these alternative models and their fit statistics is provided in Table 6. The best fitting model without a direct effect between predictor and outcome variables was the original hypothesized model. The best fitting model with a direct effect between predictor and outcome variables was the model that had perceived partner satisfaction with the respondent's body as the predictor, body satisfaction as the first mediator, sexual satisfaction as the second mediator and relationship satisfaction as the outcome (i.e., Alternative 2). Because these two models were nonhierarchical, a chi-square difference test was not appropriate and the models were compared using information criteria [i.e., Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC), and Sample-Size Adjusted BIC (SABIC) fit indices]; smaller values indicate a model with relatively better fit, fewer free parameters, and a higher likelihood of replicating (Geiser, 2013; Kline, 2011). The information criteria values all favoured the original hypothesized model (AIC = 4937.886, BIC = 5043.649, SABIC = 4948.546) over the Alternative 2 model (AIC = 4938.909, BIC = 5051.723, SABIC = 4950.280). Therefore, relative to

other theoretically plausible models, the hypothesized model provided the best fit to the

data.

Table 6

Tests of Alternative Mediation Models

Model	Predictor	Mediator 1	Mediator 2	Outcome	Model fit
Hypothesized model (no direct effect)	Body sat	Perceived partner sat	Sex sat	Rel sat	$\chi^2(14) = 19.434, p = .149$, CFI $= 0.991$, TLI $= 0.982$, RMSEA $= 0.039$, SRMR $= 0.031$
Alternative 1 (direct effect)	Body sat	Perceived partner sat	Rel sat	Sex sat	$\chi^2(12) = 17.293, p = .139$, CFI $= 0.991$, TLI $= 0.979$, RMSEA $= 0.042$, SRMR $= 0.031$
Alternative 1 (no direct effect)	Body sat	Perceived partner sat	Rel sat	Sex sat	$\chi^2(14) = 21.708, p = .085$, CFI $= 0.987$, TLI $= 0.974$, RMSEA $= 0.047$, SRMR $= 0.034$
Alternative 2 (direct effect)	Perceived partner sat	Body sat	Sex sat	Rel sat	$\chi^2(12) = 16.457, p = .171$, CFI $= 0.992$, TLI $= 0.983$, RMSEA $= 0.038$, SRMR $= 0.027$
Alternative 2 (no direct effect)	Perceived partner sat	Body sat	Sex sat	Rel sat	$\chi^2(14) = 59.197, p < .001$, CFI $= 0.923$, TLI $= 0.852$, RMSEA $= 0.113$, SRMR $= 0.055$
Alternative 3 (direct effect)	Perceived partner sat	Body sat	Rel sat	Sex sat	$\chi^2(12) = 16.643, p = .164$, CFI $= 0.992$, TLI $= 0.982$, RMSEA $= 0.039$, SRMR $= 0.028$
Alternative 3 (no direct effect)	Perceived partner sat	Body sat	Rel sat	Sex sat	$\chi^2(14) = 24.833, p = .036$, CFI $= 0.982$, TLI $= 0.964$, RMSEA $= 0.056$, SRMR $= 0.033$
Alternative 4 (direct effect)	Rel sat	Sex sat	Perceived partner sat	Body sat	$\chi^2(12) = 18.234, p = .109$, CFI $= 0.988$, TLI $= 0.974$, RMSEA $= 0.045$ SRMR $= 0.031$
Alternative 4 (no direct effect)	Rel sat	Sex sat	Perceived partner sat	Body sat	$\chi^2(14) = 21.074, p = .100$, CFI $= 0.987$, TLI $= 0.974$, RMSEA $= 0.045$, SRMR $= 0.032$
Alternative 5 (direct effect)	Sex sat	Rel sat	Perceived partner sat	Body sat	$\chi^2(12) = 18.234, p = .109$, CFI $= 0.988$, TLI $= 0.974$, RMSEA $= 0.045$ SRMR $= 0.031$
Alternative 5 (no direct effect)	Sex sat	Rel sat	Perceived partner sat	Body sat	$\chi^2(14) = 17.487, p = .132$, CFI $= 0.990$, TLI $= 0.977$, RMSEA $= 0.043$, SRMR $= 0.030$

Note. Body sat = Body satisfaction; Perceived partner sat = Perceived partner satisfaction with the respondent's body; Sex sat = Sexual satisfaction; Rel sat = Relationship satisfaction; $N = 251$.

Subsidiary hypotheses.

Hypothesis 8. *The association between body satisfaction and perceived partner satisfaction with the respondent's body would be stronger than the association between body satisfaction and actual partner satisfaction with the respondent's body*. This hypothesis was tested by estimating an APIM that included two predictor variables (female and male body satisfaction) and four outcome variables (female and male perceived partner satisfaction with the respondent's body, female and male actual partner satisfaction with the respondent's body).

As in the APIMs above, the model has no degrees of freedom and, therefore, fit indices cannot be computed. For women, both the association between body satisfaction and perceived partner satisfaction with the respondent's body ($\beta = .409$, $p < .001$) and the association between body satisfaction and actual partner satisfaction with the respondent's body ($\beta = .159$, $p = .008$) were significant. Constraining these two effects to equality significantly worsened model fit: Satorra-Bentler χ^2_D (1) = 12.601, $p < .001$, CFI = 0.955, TLI = 0.363, RMSEA = 0.215, SRMR = 0.039. This indicates that there is a significant difference between the sizes of these effects.

For men, both the association between body satisfaction and perceived partner satisfaction with the respondent's body ($\beta = .552$, $p < .001$) and the association between body satisfaction and actual partner satisfaction with the respondent's body ($\beta = .130$, $p = .035$) were significant. Constraining these two effects to equality significantly worsened model fit: Satorra-Bentler χ^2_D (1) = 26.745, $p < .001$, CFI = 0.899, TLI = 0.413, RMSEA = 0.320, SRMR = 0.059. This indicates that there is a significant difference between the sizes of these effects.

To summarize, hypothesis 8 was confirmed. For both women and men, the association between body satisfaction and perceived partner satisfaction with the respondent's body was stronger than the association between body satisfaction and actual partner satisfaction with the respondent's body.

Hypothesis 9. *Body satisfaction would be lower than perceived partner satisfaction with the respondent's body, which in turn, would be lower than actual partner satisfaction with the respondent's body.* In order to compare these three variables, Friedman's test of differences was conducted separately for each gender. Friedman's test is the nonparametric equivalent of the repeated measures ANOVA, and was used because the assumptions of normality and independence of observations were violated for these data. Post-hoc analyses were conducted using pairwise Friedman's tests, and a Bonferroni corrected alpha value of 0.017 was used.

For women, there was a significant difference between these three variables: χ^2 $(2) = 343.169, p < .001$. All three post-hoc analyses revealed significant differences at the Bonferroni corrected alpha level. Pairwise Friedman's tests revealed that, consistent with expectations, females' body satisfaction ($M = 23.78$) was significantly lower than their perceptions of their partner's satisfaction with the respondent's body ($M = 34.06$), which was significantly lower than their partner's actual satisfaction with the respondent's body ($M = 35.85$).

Similarly, for men, there was a significant difference between these three variables: χ^2 $(2) = 219.126, p < .001$. All three post-hoc analyses revealed significant differences at the Bonferroni corrected alpha level. Pairwise Friedman's tests revealed that, consistent with expectations, males' body satisfaction ($M = 27.91$) was significantly

lower than their perceptions of their partner's satisfaction with the respondent's body (M = 32.78), which was significantly lower than their partner's actual satisfaction with the respondent's body (M = 35.84).

A summary of all hypotheses is presented in Table 7.

Table 7

Summary of Main Findings

	Hypothesis	Analysis	Result	Interpretation
1.	Higher levels of body satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	APIM	**Hypothesis partially supported**: significant actor effects for both genders; significant partner effect for men; marginally significant partner effect for women.	Sally's body satisfaction predicts both partners' relationship satisfaction. Harry's body satisfaction predicts Harry's relationship satisfaction and marginally predicts Sally's relationship satisfaction.
2.	Higher levels of body satisfaction would be associated with higher levels of perceived partner satisfaction with the respondent's body (actor effect).	APIM	**Hypothesis supported**: significant actor effects for both genders.	Sally's body satisfaction predicts Sally's perception of Harry's satisfaction with her body. Harry's body satisfaction predicts Harry's perception of Sally's satisfaction with his body.
3.	Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).	APIM	**Hypothesis supported**: significant actor and partner effects for both genders.	Sally's perception of Harry's satisfaction with her body predicts both partners' sexual satisfaction. Harry's perception of Sally's satisfaction with his body predicts both partners' sexual satisfaction.
4.	Higher levels of sexual satisfaction would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	APIM	**Hypothesis partially supported**: significant actor effects for both genders, but significant partner effect only for women.	Sally's sexual satisfaction predicts Sally's relationship satisfaction, but not Harry's relationship satisfaction. Harry's sexual satisfaction predicts both partners' relationship satisfaction.

5. Higher levels of body satisfaction would be associated with higher levels of own sexual satisfaction (actor effect) and partner sexual satisfaction (partner effect).	APIM	**Hypothesis supported**: significant actor and partner effects for both genders.	Sally's body satisfaction predicts both partners' sexual satisfaction. Harry's body satisfaction predicts both partners' sexual satisfaction.
6. Higher levels of perceived partner satisfaction with the respondent's body would be associated with higher levels of own relationship satisfaction (actor effect) and partner relationship satisfaction (partner effect).	APIM	**Hypothesis supported**: significant actor and partner effects for both genders.	Sally's perception of Harry's satisfaction with her body predicts both partners' relationship satisfaction. Harry's perception of Sally's satisfaction with his body predicts both partners' relationship satisfaction.
7. Perceived partner satisfaction with the respondent's body and sexual satisfaction would mediate the association between body satisfaction and relationship satisfaction.	APIMeM	**Hypothesis supported**: significant actor-actor-actor and actor-partner-actor indirect effects.	Sally's body satisfaction predicts her perception of Harry's satisfaction with her body. This perception, in turn, predicts (a) Sally's sexual satisfaction, which predicts her relationship satisfaction and (b) Harry's sexual satisfaction, which predicts his relationship satisfaction. Harry's body satisfaction predicts his perception of Sally's satisfaction with his body. This perception, in turn, predicts (a) Harry's sexual satisfaction, which predicts his relationship satisfaction and (b) Sally's sexual satisfaction, which predicts her relationship satisfaction.

8. The association between body satisfaction and perceived partner satisfaction with the respondent's body would be stronger than the association between body satisfaction and actual partner satisfaction with the respondent's body.	APIM	**Hypothesis supported** for both genders.	Sally's body satisfaction is more closely related to her perception of Harry's satisfaction with her body, than to Harry's actual satisfaction with her body. Harry's body satisfaction is more closely related to his perception of Sally's satisfaction with his body, than to Sally's actual satisfaction with his body.
9. Body satisfaction would be lower than perceived partner satisfaction with the respondent's body, which in turn, would be lower than actual partner satisfaction with the respondent's body.	Friedman's	**Hypothesis supported** for both genders.	Sally perceives Harry to be more satisfied with her body than she is with her own body. Harry is more satisfied with Sally's body than Sally perceives him to be. Harry perceives Sally to be more satisfied with his body than he is with his own body. Sally is more satisfied with Harry's body than Harry perceives her to be.

Note. APIM = Actor-Partner Interdependence Model; APIMeM = Actor-Partner Interdependence Mediation Model; Friedman's = Friedman's Test of Differences

Ancillary Analyses

Ancillary analyses were conducted to examine whether own body satisfaction, perceived partner satisfaction with the respondent's body, and satisfaction with the partner's body (i.e., actual partner satisfaction with the respondent's body) were associated with sexual satisfaction and relationship satisfaction when all of these predictors were entered into the model simultaneously (i.e., controlling for one another).

Two separate APIMs for distinguishable dyads were conducted, one in which female and male sexual satisfaction were the dependent variables, and another in which female and male relationship satisfaction were the dependent variables. For both of these APIMs, own body satisfaction, perceived partner satisfaction with the respondent's body, and satisfaction with the partner's body were included as predictor variables. As with the previous APIMs for distinguishable dyads, the model was saturated, and as such, measures of model fit could not be computed. One-tailed significance values are reported for body satisfaction and perceived partner satisfaction with the respondent's body because hypotheses were previously made about directions of influence. Two-tailed significance values are reported for satisfaction with the partner's body because no hypotheses were made for this variable.

Sexual satisfaction as the outcome variable. Hypothesis 5 previously tested whether body satisfaction predicted sexual satisfaction within an APIM, and this hypothesis was supported. Hypothesis 3 previously tested whether perceived partner satisfaction with the respondent's body predicted sexual satisfaction within an APIM, and this hypothesis was also supported. The current analysis was conducted to examine whether these findings would hold when own body satisfaction, perceived partner

satisfaction, and satisfaction with the partner's body (i.e., actual partner satisfaction with the respondent's body) were simultaneously entered into the model. A secondary goal was to assess the extent to which satisfaction with the partner's body was associated with sexual satisfaction. Results are shown in Table 8.

Women's body satisfaction predicted own sexual satisfaction (actor effect only), whereas men's body satisfaction was not associated with own or partner sexual satisfaction. Satisfaction with the partner's body predicted own sexual satisfaction (actor effect only) for both genders. Perceived partner satisfaction with the respondent's body predicted own and partner sexual satisfaction for both genders. Thus, perceived partner satisfaction with the respondent's body was the only variable to demonstrate both actor and partner effects on sexual satisfaction for both women and men.

Table 8

Ancillary Analysis Predicting Sexual Satisfaction in an Actor-Partner Interdependence

Model (APIM)

Predictor	Type of effect	β	
		Women	Men
Body satisfaction	Actor	.169**	.023
	Partner	-.001	.007
Perceived partner satisfaction with respondent's body	Actor	.119*	.248***
	Partner	.235***	.120†
Satisfaction with partner's body	Actor	.305***	.245**
	Partner	-.092	.093

Note. One-tailed values are reported for body satisfaction and perceived partner satisfaction with the respondent's body. Two-tailed values are reported for satisfaction with partner's body.
† *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

Relationship satisfaction as the outcome variable. Hypothesis 1 previously

tested whether body satisfaction predicted relationship satisfaction within an APIM; this

hypothesis was supported for women, and partially supported for men. Hypothesis 6

previously tested whether perceived partner satisfaction predicted relationship

satisfaction within an APIM, and this hypothesis was supported. The current analysis

was conducted to examine whether these findings would hold when body satisfaction,

perceived partner satisfaction with the respondent's body, and satisfaction with the

partner's body (i.e., actual partner satisfaction with the respondent's body) were

simultaneously entered into the model. A secondary goal was to assess the extent to

which satisfaction with partner's body was associated with relationship satisfaction.

Results are shown in Table 9.

Body satisfaction did not predict own or partner relationship satisfaction for either

gender. Satisfaction with the partner's body predicted own relationship satisfaction

(actor effect only) for both genders. Perceived partner satisfaction with the respondent's

body predicted own and partner relationship satisfaction for both genders. Thus, as in the

results of the analysis with sexual satisfaction as the outcome variable, perceived partner

satisfaction with the respondent's body was the only variable to demonstrate both actor

and partner effects on relationship satisfaction.

Table 9

Ancillary Analysis Predicting Relationship Satisfaction in an Actor-Partner

Interdependence Model (APIM)

		β	
Predictor	Type of effect	Women	Men
Body satisfaction	Actor	.036	.050
	Partner	-.032	-.042
Perceived partner satisfaction with respondent's body	Actor	.343***	.161*
	Partner	.195**	.218**
Satisfaction with partner's body	Actor	.395***	.316***
	Partner	-.075	.049

Note. One-tailed values are reported for body satisfaction and perceived partner satisfaction with the respondent's body. Two-tailed values are reported for satisfaction with partner's body.
*p < .05. **p < .01. ***p < .001.

CHAPTER IV

Discussion

Summary of Findings

Body satisfaction predicting relationship satisfaction. The overall goal of the current study was to understand why body satisfaction and relationship satisfaction have been consistently linked in previous research. To date, the majority of research in this area has been conducted with women and with individual participants, rather than couples. Therefore, the current study first sought to examine whether these variables would be associated at a dyadic level and whether effects would be found for both women and men.

It was hypothesized that individuals who were more satisfied with their appearance would report higher relationship satisfaction, and that their partners would also report higher relationship satisfaction. This hypothesis was supported for women and partially supported for men. That is, women's body satisfaction predicted their own relationship satisfaction and their partner's relationship satisfaction. Men's body satisfaction predicted their own relationship satisfaction, and marginally predicted their partner's relationship satisfaction. This marginal significance is likely due to inadequate power to detect a small partner effect size. Supporting this notion, there were no significant gender differences in the dyadic associations between body image and relationship satisfaction. Furthermore, the few prior studies in this area that have involved men indicate that body satisfaction is significantly linked to relationship satisfaction for both genders (Ambwani & Strauss, 2007; Friedman et al., 1999).

The current results contradict Paap and Gardner's (2011) report that body

satisfaction did not predict relationship satisfaction, but are consistent with the majority

of reports that support an association between body satisfaction and relationship

satisfaction. This includes prior studies using individual participants (Boyes et al., 2007;

Friedman et al., 1999; Hoyt & Kogan, 2001; Lee & Thomas, 2012) and both members

within a dyad (Meltzer & McNulty, 2010; Morrison et al., 2009). The small to moderate

actor effects found in the current study were consistent with those reported in the existing

literature; as was expected, the partner effect size was small, and approximately half the

size of the actor effect.

Notably, however, subsequent analyses revealed that the actor and partner effects

found in the association between body satisfaction and relationship satisfaction were no

longer significant once perceived partner satisfaction with the respondent's body and

satisfaction with the partner's body were included in the model. This suggests that

previous reports of an association between body image and relationship satisfaction may

reflect a spurious link, as most of these studies did not control for these other variables.

That is, it may be that body image and relationship satisfaction are only linked via their

shared relationship with other variables.

Body satisfaction predicting sexual satisfaction. In recent research, sexual

satisfaction has been identified as a mediator of the body image and relationship

satisfaction association (Meltzer & McNulty, 2010). Accordingly, in the current study,

the body satisfaction and sexual satisfaction association was examined at the dyadic

level. It was hypothesized that individuals who were more satisfied with their appearance

would report higher sexual satisfaction, and have partners who also reported higher

sexual satisfaction. This hypothesis was supported. For both women and men, body satisfaction predicted own sexual satisfaction and partner sexual satisfaction. Actor effects were small to moderate, whereas partner effects were small. The link between body satisfaction and sexual satisfaction has been shown many times (Holt & Lines, 2007; Hoyt & Kogan, 2001; Meltzer & McNulty, 2010; Pujols et al., 2010; Sanchez-Fuentes et al., 2014; Woertman & van den Brink, 2012). However, many of these prior studies have exclusively focused on women, and when prior studies included both genders, contradictory findings have been reported; some researchers have found no gender differences (Holt & Lyness, 2007; Sanchez & Kiefer, 2007; Zhaoyang & Cooper, 2013), whereas others have observed that body image is associated with sexual satisfaction for women, but not for men (Ambwani & Strauss, 2007; Daniels & Bridges, 2013). The current findings indicate that these variables are linked for both women and men, with no significant gender differences.

Why might body dissatisfaction impact sexual satisfaction? Some research suggests the answer relates to lower levels of sexual frequency, such that individuals who are body dissatisfied are more likely to avoid sex, leading to lower sexual satisfaction (Faith & Schare, 1993; La Rocque & Cioe, 2011; Meltzer & McNulty, 2010; Wiederman, 2011). Other research suggests that body dissatisfaction increases feelings of self-consciousness during sexual activities, reducing sexual functioning and satisfaction (Barlow, 1986; Cash, Maikkula, & Yamamiya, 2004a; Kiefer & Sanchez, 2007; Steer & Tiggeman, 2008; Wiederman, 2000).

One shortcoming of past research in this area has been the tendency to include participants who were not involved in a romantic or sexual relationship at the time of the

study. The study by Zhaoyang and Cooper (2013) stands out for its inclusion of both members of a sexual partnership and the use of dyadic data analyses. Using a three-week diary study methodology, these researchers demonstrated that body satisfaction significantly predicted own, but not partner, sexual quality (a composite measure that included sexual satisfaction as well as arousal and intimacy). However, this association was no longer significant after controlling for satisfaction with a partner's body. Similarly, in the current study, the effect of body satisfaction on sexual satisfaction decreased, or was no longer significant, after controlling for satisfaction with the partner's body and perceived partner satisfaction with the respondent's body. As in Zhaoyang and Cooper's (2013) study, satisfaction with the partner's body predicted own sexual satisfaction for both genders. However, in the current study, there was even more compelling evidence that perceived partner satisfaction with the respondent's body, a variable that was not assessed by Zhaoyang and Cooper (2013), was linked to sexual satisfaction.

Body satisfaction predicting perceived partner satisfaction with the respondent's body. To summarize the above findings, body satisfaction was generally found to predict personal and partner sexual satisfaction, as well as personal and partner relationship satisfaction, findings that were expected based on previous research. For the most part, however, these associations were no longer significant once perceived partner satisfaction with the respondent's body and satisfaction with the partner's body were also controlled in the model. Unlike body satisfaction, perceived partner satisfaction with the respondent's body predicted sexual satisfaction and relationship satisfaction. This raises

the possibility that body satisfaction is only linked to relationship outcomes via a shared relationship with perceived partner satisfaction with the respondent's body.

When the association between body satisfaction and perceived partner satisfaction with the respondent's body was examined, respondents who were more satisfied with their appearance also perceived their partners to be more satisfied with the respondent's appearance. This finding was apparent among both women and men, and no significant gender differences were found. Effect sizes were moderate to large for women and large for men, which is generally consistent with the effect sizes reported in past research (Goins et al., 2012; Markey et al., 2004; Miller, 2001; Pole et al., 2004; Rieves & Cash, 1996; Rieves & Cash, 1999; Thomas, 1989). Although own body satisfaction and perceived partner satisfaction with the respondent's body were related, both women and men were significantly less satisfied with their bodies than they perceived their partners to be. This finding is consistent with previous studies (Goins et al., 2012; Markey et al., 2004; Rieves & Cash, 1999). Additionally, personal body satisfaction was more strongly linked to perceived partner appearance evaluations than to actual partner appearance evaluations.

Importantly, there was a moderate effect of body satisfaction predicting perceived partner satisfaction with the respondent's body, even after controlling for partners' actual satisfaction with the respondent's body. These findings support Kenny and DePaulo's (1993) assertion that people use their own self-perceptions, rather than actual feedback, to determine how they are perceived. Previous researchers have argued that people's tendency to project their own self-views onto others leads to inaccurate perceptions of how others view them (Kenny & Acitelli, 2001; Kenny & DePaulo, 1993; Murray et al.,

2000). Indeed, in the current study, both genders underestimated their partner's satisfaction with the respondent's body. This finding supports a large body of literature showing that our partners tend to be more satisfied with our appearance than we think they are (Markey & Markey 2006; Markey et al., 2004; Miller, 2001; Rieves & Cash, 1999). In other words, our perceptions are inaccurate.

Perceived partner satisfaction with the respondent's body predicting sexual satisfaction and relationship satisfaction. To summarize, satisfaction with our appearance is associated with our perceived partner's satisfaction with our appearance, although our partners are actually more satisfied with our appearance than we perceive them to be. The next question is whether these inaccurate perceptions are linked to subjective evaluations of romantic relationships.

In the current study, it was hypothesized that respondents who perceived that their partner was satisfied with the respondent's body would report higher sexual satisfaction and have partners who reported higher sexual satisfaction. This hypothesis was supported for both genders, and small to moderate actor and partner effects were found. A gender difference emerged in the actor effect such that the association between perceived partner satisfaction with the respondent's body and own sexual satisfaction was stronger for men than for women.

Notably, perceived partner satisfaction with the respondent's body predicted sexual satisfaction beyond the effect of own body satisfaction and satisfaction with the partner's body. In fact, perceived partner satisfaction with the respondent's body was the most robust predictor of sexual satisfaction in that it was the only variable to demonstrate both actor and partner effects for both genders. These results are consistent with previous

studies showing that perceived partner appearance evaluations predict own sexual satisfaction (Rieves & Cash, 1996), even after controlling for body satisfaction (Holt & Lyness, 2007). However, contrary to the findings of Rieves and Cash (1999), effects were found for both women and men in the current study. That study—which found that perceived partner appearance evaluations predicted sexual satisfaction for men, but not women—conducted exploratory regression analyses separately by gender; the dyadic analyses used in the current study represent a higher analytic standard. This, along with differences in the demographic makeup of the two samples [e.g., 24% African-American in the Rieves and Cash (1999) study versus 4% Black/African-Canadian/Caribbean-Canadian in the current study], likely contributed to the different results that were obtained.

Next, dyadic associations between perceived partner appearance evaluations and relationship satisfaction were examined. It was hypothesized that individuals who perceived that their partner was satisfied with the respondent's body would report higher relationship satisfaction and have partners who reported higher relationship satisfaction. This hypothesis was supported for both women and men, and no gender differences were found. Actor effects were moderate to large for both genders, whereas partner effects were large for women and moderate for men.

Prior research in this area has yielded conflicting findings. Some have reported that perceived partner appearance evaluations and relationship satisfaction are associated for women (Szymanski & Cash, 1995), whereas others failed to replicate this finding (Morrison et al., 2009). Among studies that included both genders, one reported a marginally significant association (Paap & Gardner, 2011), whereas another reported that

these variables were related for men, but not women (Rieves & Cash, 1999).

Methodological differences between studies (e.g., longitudinal versus cross-sectional

designs, sampling romantic dyads versus individual respondents) likely account for the

mixed findings. Due to significant limitations in previous research—such as using body

image measures that focus on thinness with men (Paap & Gardner, 2011) and analyzing

couples data using standard analytic methods that do not account for partners'

interdependence (Morrison et al., 2009; Rieves & Cash, 1999)—it is argued that the

current study provides a stronger quality of evidence.

Sexual satisfaction predicting relationship satisfaction. Individuals who were

sexually satisfied were expected to report higher relationship satisfaction and have

partners who reported higher relationship satisfaction, and this hypothesis was partially

supported. Actor effects were found for both genders and the effect sizes were large.

The actor effects observed in the current study are consistent with a large literature that

indicates that women and men who are sexually satisfied are also more likely to be

satisfied in their relationship (Edwards & Booth, 1994; Fisher et al., 2015; Kisler &

Christopher, 2008; Lawrance & Byers,1995; Meltzer & McNulty, 2010; McNulty et al.,

2016; Sprecher et al., 2002; Yeh et al., 2006). Contrary to prior reports, however, there

was no evidence in the current study that women and men differed with respect to the

strength of the association between own sexual satisfaction and own relationship

satisfaction (Kisler & Christopher, 2008; Sprecher, 2002).

Partner effects were evident only for women (small to moderate effect size). That

is, men's sexual satisfaction predicted their own relationship satisfaction and their

partner's relationship satisfaction. Women's sexual satisfaction predicted their own

relationship satisfaction, but not men's relationship satisfaction. One interpretation of these findings is that a partner's sexual satisfaction is more important to women than to men; this interpretation is consistent with existing heterosexual scripts of sexuality, which emphasize men's sexual experience while dictating that women should focus more on their partner's desires and sensations than their own (Fredrickson & Roberts, 1997). Thus, it may be that women are satisfied in their relationships when their male partner is sexually satisfied with them, whereas the same does not hold true for men.

Partner effects in the association between sexual and relationship satisfaction have not been consistently demonstrated in past dyadic studies. Some researchers report observing no partner effects for either gender (McNulty et al., 2016; Stanik & Bryant, 2012), whereas others report significant partner effects for both genders (Fisher et al., 2015). Interestingly, the current study's findings of partner effects for only women contrasts Yoo and colleagues' (2014) study, which found partner effects for only men. Although it is difficult to speculate about why different results have been obtained, there are some notable differences in the participants sampled across these studies. For example, Stanik and Bryant's (2012) study was comprised of newlywed African-American couples whereas Yoo and colleagues' (2014) study was comprised of primarily European-American couples involved in long-term marriages; additionally, the Fisher and colleagues' (2015) study used a multinational data set that included couples from Brazil, Germany, Japan, Spain, and the United States. Perhaps the association between own sexual satisfaction and partner relationship satisfaction varies according to cultural factors and/or the nature and duration of a couples' relationship.

Taken together, findings suggest that an individual's sexual satisfaction is strongly linked to their own relationship satisfaction, and that this association does not differ by gender. Men's sexual satisfaction also predicted their *partner's* relationship satisfaction in the current study. In future research, it would be useful to clarify observed inconsistencies in the literature with respect to partner effects in the association between sexual and relationship satisfaction.

Mediation model. Based on the results of the APIM analyses, perceived partner satisfaction with the respondent's body and sexual satisfaction were expected to mediate the association between body satisfaction and relationship satisfaction. Two types of indirect effects emerged as anticipated: an actor-actor-actor indirect effect explaining the association between own body satisfaction and own relationship satisfaction, and an actor-partner-actor indirect effect explaining the association between own body satisfaction and partner relationship satisfaction. Thus, the hypothesis was supported as both types of indirect effects were found. Moreover, results showed complete mediation for both types of indirect effects, such that body satisfaction and relationship satisfaction were no longer related once the two mediators were included in the model.

Individuals who were satisfied with their appearance were more likely to perceive that their partners shared their views of the individual's appearance. This perception predicted (a) personal sexual satisfaction, which in turn, predicted personal relationship satisfaction, and (b) partner sexual satisfaction, which in turn, predicted partner relationship satisfaction. Moreover, the mediation results remained significant even after controlling for the partner's actual satisfaction with the individual's body. This suggests that perceptions play an important role in romantic relationships, even if they are often

inaccurate, as prior research has shown (e.g., Kenny & Acitelli, 2001). The mediated effects also remained significant after controlling for self-esteem, depression, and social desirability, providing evidence of the robust nature of these results. BMI was expected to be a potentially confounding variable that would be need to be controlled; however, it was unrelated to sexual satisfaction and relationship satisfaction for both genders, and was a poor fit when included in the mediation model. It may be that satisfaction with a partner's appearance, which *did* predict own sexual and relationship satisfaction, extends beyond a partner's BMI and includes other physical attributes (e.g., facial attractiveness). Alternatively, perhaps the weight of one partner is less relevant to relationship outcomes than is partners' relative weight. Indeed, Meltzer, McNulty, Novak, Butler, and Karney (2011) found that both partners reported greater marital satisfaction when wives had lower BMIs than their husbands.

Although these results are correlational in nature and cannot definitively prove causation, two factors increase confidence in my interpretation. First, several alternative analytic models that were theoretically plausible were analyzed. This included a model that completely reversed the order of the variables, a model that reversed the order of body satisfaction and perceived partner satisfaction with the respondent's body, and a model that reversed the order of sexual satisfaction and relationship satisfaction. Despite testing all of these alternative models, the original hypothesized model provided the best fit with the data. Second, my presumed order of variables is consistent with self-verification theory (which states that people seek information that confirms their existing self-views) and the risk regulation model (which states that perceived partner regard

influences relationship satisfaction, rather than the reverse), both of which have received

considerable empirical support.

To date, only two studies have examined intervening variables that might explain

the association between body image and relationship satisfaction, and both highlighted

the role of the sexual relationship. Meltzer and McNulty's (2010) research focused on

women's experiences within their marital relationships and found that sexual functioning

(i.e., sexual frequency and satisfaction) mediated the association between wives' body

dissatisfaction and the couples' marital satisfaction. In a subsequent study, Gagnon-

Girouard and colleagues (2014) assessed both women and men's body image concerns

and conducted dyadic analyses; unfortunately, mediation was not directly tested.

Consistent with results of the current study, these authors reported that women's body

satisfaction predicted sexual satisfaction, which in turn, predicted relationship

satisfaction. However, the same result was not obtained for men. Several important

limitations of Gagnon-Girouard and colleagues' (2014) study may account for the failure

to identify sexual satisfaction as an intervening variable among men, including their use

of a body image measure that emphasized weight concerns rather than muscularity

concerns that are more predominant for men, and insufficient power to detect

hypothesized effects. Therefore, the current results replicate previous findings that

identify sexual satisfaction as an intervening variable in the body image and relationship

satisfaction association among women, and extend this finding to men.

Several lines of earlier research suggested that perceived partner appearance

evaluations might also play a role in the body image and relationship satisfaction

association. These include studies showing that body satisfaction predicts perceived

partner satisfaction with the respondent's body (e.g., Goins et al., 2012; Markey et al., 2004), that these perceptions tend to be inaccurate (e.g., Markey & Markey, 2006), and that these perceptions are linked to sexual and relationship satisfaction (e.g., Holt & Lyness, 2007; Rieves & Cash, 1999). However, perceived partner appearance evaluations have not been assessed as an intervening variable in any prior studies. The current finding that perceived partner satisfaction with the respondent's body, in addition to sexual satisfaction, completely mediates the association between body satisfaction and relationship satisfaction therefore represents a significant contribution to the field.

As previously noted, power concerns plague dyadic research due to the large sample sizes that are required to detect small partner effects. Power concerns are particularly problematic when dyads are treated as distinguishable (i.e., effects are estimated separately for women and men) and when various control variables are included in the model. In order to ensure there was sufficient power to detect hypothesized effects, in the current study, estimates were pooled across genders when testing the mediation model (Ledermann et al., 2011). As noted by Sadler and colleagues (2011), the results of analyses that treat dyads as distinguishable versus indistinguishable will closely approximate each other as long as the number of dyads is large (i.e., 80 or greater). Importantly, however, the mediation model was subsequently tested by estimating separate effects for women and men in order to assess for potential gender differences. The results of this distinguishable analysis replicated the results of the indistinguishable analysis reported above. There were significant actor-actor-actor and actor-partner-actor indirect effects for both genders, such that body satisfaction predicted relationship satisfaction via perceived partner satisfaction with the respondent's body and

sexual satisfaction. The fact that significant results were obtained even when the model had less power to detect such effects speaks to the robustness of the findings. More importantly, these results show that the process by which body satisfaction is hypothesized to affect relationship satisfaction is the same for both genders. This is important given that the majority of body image research (including research linking body image to relationship functioning) has focused on the experiences of women.

Satisfaction with partner's appearance predicting sexual satisfaction and relationship satisfaction. Although not a question of central interest during the current study, satisfaction with a partner's appearance predicted personal sexual satisfaction and personal relationship satisfaction for both genders, above and beyond the effects of body satisfaction and perceived partner satisfaction with the respondent's body. Partner effects were not significant for either gender. In other words, an individual's satisfaction with their partner's appearance predicted personal sexual and relationship satisfaction, but not their partner's sexual or relationship satisfaction. In Zhaoyang and Cooper's (2013) dyadic study, the association between body satisfaction and personal sexual quality became insignificant after controlling for satisfaction with partner's body. They hypothesized that previous findings of an association between body satisfaction and sexual functioning could be explained by these variables' shared association with satisfaction with a partner's body. Specifically, they speculated that people who are happy with their appearance are more likely to become romantically involved with partners they find attractive, which leads to rewarding and high quality sexual experiences.

Indeed, others have found that satisfaction with a partner's appearance (Morrison et al., 2009; Rieves & Cash, 1999) and attraction to a partner (Eastwick, Luchies, Finkel, & Hunt, 2014; Mark & Herbenick, 2014; Sangrador & Yela, 2000) are associated with sexual and relationship satisfaction for both women and men. As such, results from the current study suggest that finding one's partner to be physically attractive is important not only at the beginning of a romantic relationship (Baron, Byrne, & Watson, 2005; Berscheid & Regan, 2005), but also as the relationship endures over time.

Gender differences. Consistent with past research (Murnen, 2011; Muth & Cash, 1997), women reported poorer body satisfaction and poorer investment-weighted body satisfaction than men; these differences were moderate in size. It is important to note that the gender differences in body image emerged even when using measures that were applicable to both genders. This suggests that there is a true difference in how women and men evaluate their appearance. However, it is also plausible that men are less likely than women to admit to body dissatisfaction due to social norms. Men in the current study were more likely to perceive that their partners were dissatisfied with their body, a small effect size, despite the fact that women and men reported being equally satisfied with their partner's bodies.

With respect to the research questions of primary interest, very few gender differences were found. Specifically, of the 11 effects tested in six APIMs, only two gender differences emerged. First, the association between perceived partner satisfaction with the respondent's body and own sexual satisfaction (actor effect) was larger for men than for women. Second, the association between sexual satisfaction and partner relationship satisfaction (partner effect) was significant for women, but not men. In

general, the APIMs revealed that women and men were more similar than they were

different. Importantly, the mediation analysis revealed that the process by which body

satisfaction is associated with relationship satisfaction is the same for women and men.

That is, for both genders, body satisfaction indirectly predicts relationship satisfaction via

perceived partner satisfaction with the respondent's body and sexual satisfaction. Taken

together, these findings indicate that the tendency to exclude men from this area of

research ignores the fact that they, like women, experience negative interpersonal

outcomes (i.e., lower sexual and relationship satisfaction) related to body image

problems.

Limitations and Directions for Future Research

Several limitations of the current study need to be acknowledged. First, the

sample was predominately comprised of White, heterosexual university students who

were involved in dating relationships, despite attempts to recruit a more diverse

community sample. Although it is encouraging that many of the results are in line with

studies involving married couples (e.g., Meltzer & McNulty, 2010), attempts should be

made to extend these findings to other populations, such as gay and lesbian couples and

more ethnically and racially diverse couples.

Second, some methodological issues should be noted. The first item of the CSI

contained a higher amount of missing data than all other questionnaire items. The

wording ("Please indicate the degree of happiness, all things considered, of your

relationship") and placement as the first item on the questionnaire appears to have led

some participants to interpret it as part of the instructions for completing the measure,

instead of interpreting it as one of the questionnaire items. Although the amount of

missing data on this item (3.6% missing) was still within acceptable limits (Scheffer, 2002; Tabachnick & Fidell, 2007), future researchers using this measure should be aware of this potential methodological issue. Additionally, in the current study, two sexual satisfaction measures, the NSSS-E (which assesses sexual satisfaction related to personal experiences and sensations) and GMSEX (which assesses overall sexual satisfaction) were combined into a composite measure. Although these variables correlated strongly for women and men ($r = .66$ and $.64$, respectively), ideally, correlations of .7 or higher should be obtained before combining the variables into a composite variable (Thompson, 2004). Nevertheless, the benefits of creating a composite variable (i.e., increased range of responses, combining a more widely used measure with a more recently developed one) were judged to outweigh the downsides, and the alternative of using only one of the sexual satisfaction measures in the analyses.

Third, despite the fact that the current study's sample far exceeds that of the typical couples study (Kenny et al., 2006), due to the extremely large samples that dyadic analyses can require, some concessions still needed to be made in order to ensure the study had adequate power to detect the hypothesized effects. These included controlling for confounding variables on an individual basis, rather than simultaneously, and testing the mediation model by pooling women and men's effects (although subsequent analyses showed that results did not change when their effects were not pooled).

Fourth, as with all couples studies, there is always the potential for sampling bias, such that dissatisfied couples are less likely to participate in the study than satisfied couples (e.g., Yeh et al., 2006). Indeed, in the current sample, mean relationship

satisfaction scores for both genders suggest that couples were relatively happy in their relationships.

Finally, causal interpretations are not possible due to the correlational nature of the current study. Of note, the current study assessed a number of theoretically plausible, competing mediation models in which the order of variables differed from the hypothesized model. Some of these alternate models also fit the data, such as the model that reversed the hypothesized direction of influence. However, importantly, the hypothesized model provided the best fit to the data and was the most likely to replicate of the several models tested. Future longitudinal studies would provide more compelling evidence of causation.

Correlational studies also raise the possibility that unmeasured third variables may account for the findings. To this end, several potential confounding variables that were theoretically and empirically linked to both body satisfaction and relationship satisfaction were controlled in the mediation analysis; these included self-esteem, social desirability, depression, and satisfaction with a partner's appearance. Results of the analysis did not change when controlling for each of these variables, suggesting that the findings are robust.

Methodological Contributions

The current study makes a number of methodological contributions to the research literature. First, whereas the majority of relationship studies rely on reports from one member of a romantic dyad (Cooper & Sheldon, 2002; Kashy et al., 2006), the inclusion of both dyad members and use of dyadic analyses allowed for truly dyadic processes to be examined. For example, although each of the associations in hypotheses

1 through 6 have been demonstrated in previous studies with individual participants, the current findings show that most associations also exist across dyad members (i.e., one partner's variables predicted the other partner's variables). Similarly, the current mediation results demonstrate dyadic processes in a predictable manner: body satisfaction predicted perceived partner satisfaction with the respondent's body, which predicted (a) own relationship satisfaction via own sexual satisfaction and (b) partner relationship satisfaction via partner sexual satisfaction. It would not be possible to demonstrate such dyadic effects without having included both romantic partners in the current study.

The APIM and APIMeM are far more stringent analytic tests than correlational and mediational analyses conducted at the individual level. First, the analyses estimate actor and partner effects while controlling for one another, and can, therefore, show that individual and partner variables mutually and simultaneously predict outcome variables. Additionally, partner effects cannot simply be attributed to the shared method variance that occurs when the same respondent provides information about their predictor and outcome variables.

Another benefit of including both partners in the current study is that it permitted assessment of the accuracy of perceived partner satisfaction with the respondent's body. That is, it was possible to compare an individual's perceptions of their partner's appearance evaluations with the partner's actual evaluations. This process revealed that both genders underestimate their partner's satisfaction with their bodies, and that these inaccurate perceptions predict personal and partner relationship evaluations (even after controlling for the partner's actual satisfaction with the respondent's body).

Second, insufficient power is often problematic in dyadic research because partner effects are typically half the size of actor effects (Ackerman et al., 2010). The average sample size in dyadic studies is approximately 80 couples (Kenny et al., 2006), which suggests that many dyadic studies do not have adequate power to detect effects of interest. The online methodology employed in the current study permitted recruitment of a large enough sample to ensure that there was sufficient power to detect anticipated effects.

Third, the measures used in the current study were carefully selected in order to address methodological issues that have arisen in previous studies. One problem has been the assessment of male body image using measures that were developed for female participants; these measures tend to focus on weight dissatisfaction while neglecting muscle dissatisfaction. In contrast, the body image measures used in the current study were relevant and appropriate for use with both genders. The measurement of sexual satisfaction also has been problematic, with the widespread use of single-item measures or "objective" indicators (e.g., frequency of orgasms) as proxies for sexual satisfaction. The sexual satisfaction measures used in the current study were multi-item measures that have strong psychometric properties, and which assess respondents' subjective evaluations of their sexual relationships. Another issue is that participants tend to report high levels of sexual and relationship satisfaction (Mark & Jozkoski, 2013; Sprecher, 2002); these ceiling effects have limited previous studies' ability to predict differences in these variables. In order to address this problem, a commonly used measure of sexual satisfaction was combined with a newer measure that had greater response variability. In the assessment of relationship satisfaction, a newer measure was used that has increased precision (and, therefore, greater

power to detect differences) compared to other commonly used measures of relationship

satisfaction (Funk & Rogge, 2007).

Fourth, several potential confounds in the association between body satisfaction

and relationship satisfaction were controlled in the mediation analysis. These included

self-esteem, depression, social desirability, and actual partner satisfaction with the

respondent's body.   Relationship duration and body mass index were also examined as

potential confounders, but were not associated with both the predictor and outcome

variables, and were, therefore, not included in the model. There were no substantive

changes to the results when controlling for potential confounds. Additionally, sample

inclusion and exclusion criteria limited variance in the study by (a) excluding married

couples, given research showing that relationship satisfaction differs among

dating/cohabiting couples and married couples (Brown, 2003; Hsueh et al., 2009) and (b)

limiting the age range from 18 to 29 in order to control for possible cohort effects.

Finally, Cooper and Sheldon (2002) have noted that dyadic studies that rely

exclusively on university samples have limitations, such as the fact that participants might

not be committed to one partner. Accordingly, couples in the current study were required

to be involved in a monogamous relationship of at least six months' duration, and

approximately 20% of couples in the final sample were recruited from community.

Theoretical and Practical Implications

Satisfaction in romantic relationships has been linked to physical health

(Friedman et al., 1997; Holt-Lunstad et al., 2008; Wickrama et al., 1997), happiness

(Demir, 2008; Myers, 2000), and life satisfaction (Demir, 2008), and considerable

research has been devoted to identifying factors that make relationships more or less

satisfying. However, it is generally not clear how or why identified variables are linked to relationship satisfaction (Karney & Bradbury, 1995), and mediational hypotheses have rarely been tested.

In the current study, a mediation model was employed in order to gain an understanding about mechanisms through which body satisfaction and romantic relationship satisfaction are associated with one another. The study built on previous studies that have identified the role of the couples' sexual relationship (Gagnon-Girouard et al., 2014; Meltzer & McNulty, 2012) and incorporated the literature on the inaccurate nature of perceived partner appearance evaluations (Markey et al., 2004; Markey & Markey, 2006). Current findings indicated that perceived partner satisfaction with the respondent's body and sexual satisfaction completely mediate the association between body satisfaction and relationship satisfaction. In other words, body satisfaction and romantic relationship satisfaction appear to be linked via their relationship with (inaccurate) perceived partner appearance evaluations and the sexual relationship. Additionally, it is suggested that body satisfaction is only linked to sexual and relationship satisfaction via its association with perceived partner appearance evaluations.

A number of studies have previously identified that both women and men perceive that their partners are less satisfied with their appearance than their partners actually are (Markey & Markey, 2006; Markey et al., 2004; Miller, 2001; Rieves & Cash, 1999). The current study was able to replicate those findings, and also connect these inaccurate perceptions to important relationship outcomes. The risk regulation model (Murray et al., 2006) offers an account of why perceived partner regard matters for romantic relationships. According to the model, people use perceived partner regard to

gauge the level of risk associated with being involved in an intimate relationship. Specifically, if an individual perceives that their partner views them positively, they will feel secure and act in ways that enhance the well-being of the relationship. However, if the individual perceives that they are not viewed positively by their partner, they will feel insecure, prioritize self-protection, defensively distance themselves from the relationship, and generally act in ways that undermine relationship quality.

There are many ways in which this self-protective distancing might occur, such as refraining from sharing feelings or spending more time apart from a partner. The current study hypothesized that individuals might change their sexual behaviours in response to perceived partner dissatisfaction with the respondent's body, given the connection between appearance, body satisfaction, and sex. Although sex has the potential to strengthen a couple's bond, it also requires a great deal of vulnerability, given the numerous opportunities for hurt and rejection (e.g., being rebuffed by a partner). Therefore, engaging in sex requires partners to take emotional risks. Consistent with the predictions of the risk regulation model, in the current study, perceiving a partner to be satisfied with one's appearance predicted increased sexual satisfaction, which in turn, predicted increased relationship satisfaction. Perhaps believing that a partner is satisfied with one's appearance provides a sense of security that promotes more frequent sexual activity, greater emotional engagement during sex, and the communication of one's sexual needs, leading to a more satisfying sex life. The current findings provide support for the idea that, at least within the context of a committed relationship, sexual satisfaction is about more than physical pleasure, and also has to do with the level of intimacy between romantic partners (Rubin & Campbell, 2012).

As has been previously noted, the body image literature continues to disproportionately focus on the experiences of women, despite the fact that body dissatisfaction among men is much more common than was once assumed (e.g., Tiggemann et al., 2007). When male participants are included in this area of research, it is often only to assess the impact of female body satisfaction on her male partner (e.g., Meltzer & McNulty, 2010; Morrison et al., 2009). The current study was able to show that, similar to female body satisfaction, male body satisfaction is associated with evaluations of the sexual relationship, as well as evaluations of the relationship as a whole. Consistent with previous studies (e.g., Friedman et al., 1999; Holt & Lyness, 2007; Zhaoyang & Cooper, 2013), few gender differences were observed in the strength or significance of associations found in the current study. Moreover, no gender differences were found in the mediation model, indicating that the explanatory mechanisms involved in the body image and relationship satisfaction association are the same for women and men. These results underscore the importance of including men in this area of research.

Although it is well established that body image is affected by interpersonal factors (Tantleff-Dunn & Gokee, 2002), body image itself is currently conceptualized as an intrapsychic variable—that is, the emphasis is on self-appraisals of the body while others' perceived appraisals are largely ignored. Most body image evaluation measures, for example, assess an individual's own satisfaction with their appearance. The BIQ-E (Szymanski & Cash, 1995) is an exception to this trend, as it measures body satisfaction by assessing discrepancies from both (a) own body ideals and (b) perceived body ideals of a significant other; however, this measure is infrequently used. Notably, in the current

study, it was not own body satisfaction, but perceived partner satisfaction with the respondent's body that had robust effects on both sexual and relationship satisfaction when both variables were included in the model. This study therefore suggests that there may be value in conceptualizing body image as a construct that is fundamentally interpersonal in nature. Arguably all efforts to maintain our physical appearance (e.g., clothing, hairstyle) are interpersonal transactions, and including others' perceived appraisals might be particularly important when studying the relationship between body image and social functioning.

Beyond the body image literature, the current study supports several social and clinical psychology theories that speak to the inherent link between one's views of the self and their relationship perceptions and experiences. Within the field of clinical psychology, psychoanalytic scholars, in particular, have written extensively about how the self emerges early in life through relationships with caregivers (Davila & Miller, 2008). For example, Margaret Mahler's separation-individuation theory (1975) described the process by which the sense of self develops out of early interactions with the mother. Mahler hypothesized that, during normal development, an infant moves from experiencing the self as one with their mother towards a differentiation in which the infant comes to understand the self as a separate individual (Mitchell & Black, 1995). Like Mahler, Heinz Kohut (1971) emphasized the importance of early relationships with caregivers; however, he also believed that intimate relationships continue to become integrated into the self throughout the lifespan. Specifically, Kohut's "selfobjects" refer to important others that are experienced as part of the self, rather than as separate and independent from the self. He argued that certain "selfobject" experiences were

necessary to the development of a healthy, cohesive, and robust sense of self, one of which was a caregiver who would understand and reflect back the child's experiences, perceptions, and emotions in a process called "mirroring" (Mitchell & Black, 1995).

Whereas psychodynamic models focus on how the self develops in the context of actual interpersonal experiences, social psychology approaches more directly addressed the association between one's sense of self and their relationship *perceptions*. The terms "metaperception," "reflected appraisals," and "perceived partner regard" have all been used to describe an individual's beliefs about how they are seen by others. George Herbert Mead (1934) and Charles Horton Cooley (1902) argued that people come to understand and see themselves as they *perceive* they are seen by important others in their life. Cooley (1902) described a "looking-glass self" in which one's sense of self includes perceptions of how one appears to another person as well as perceptions of another person's judgment of that appearance. As another example, the sociometer theory (Leary & Baumeister, 2000) views self-esteem as an evolutionary mechanism that evolved for detecting one's relational value. According to this model, an individual's sense of their self-worth reflects their perceived level of social acceptance.

Others have convincingly argued that the direction of influence can also move in the opposite direction, such that self-views influence perceived other regard (Kenny & DePaulo, 1993; Murray et al., 2000; Swann, 1981). Self-verification theory (Swann, 1981) posits that people look for information that confirms their self-views—even when these self-views are negative—because a stable sense of self helps to provide a sense of control and consistency as people navigate the world. Self-verification is thought to occur through a process of attending to, interpreting, and remembering information that

reinforces existing beliefs about the self. In other words, in the search for self-verifying feedback, people may process information in a biased manner. Indeed, Kenny and DePaulo's (1993) review found that people were not particularly accurate in their perceptions of what specific others thought of them, a finding that was replicated during the current study. Given that these perceptions were not largely driven by actual social feedback, Kenny and DePaulo (1993) reasoned that people appeared to use their own self-views in determining how they thought others viewed them (i.e., assuming others see them the way they see themselves). Projecting one's views of the self onto others is thought to commonly occur in the context of intimate relationships because people assume that they know what their partner's views are, and, therefore, become less attuned to partner feedback (Kenny & DePaulo, 1993; Kenny & Acitelli, 2001). The current study supports Kenny's work in suggesting that people are often unaware of the extent to which their perceived partner regard is influenced by their own self-views. They may, therefore, not appreciate that their perceptions may be inaccurate.

The current results parallel the literature on self-esteem and relationship satisfaction: just as those with low self-esteem underestimate how positively their partners see them, those with body dissatisfaction underestimate their partners' satisfaction with their appearance. Furthermore, in both the current study and the self-esteem literature, these negative and inaccurate perceptions mediate the association between individuals' self views and their romantic relationship quality (Murray et al., 2000). As such, the current study offers support for the idea that one's self-views are largely associated with romantic relationship outcomes via perceived partner evaluations.

Thus, the risk regulation model (Murray et al., 2006), originally developed within a self-esteem framework, appears to also be applicable within a body image framework.

The current study identifies potential targets for clinical intervention for those experiencing body image and/or relationship difficulties. The finding that perceived partner appearance evaluations are inaccurate, yet linked to relationship evaluations, suggests that they may be an important target in individual or couples therapy. Cognitive behavioural therapy (CBT), for example, helps clients to identify and challenge their unrealistic thinking patterns, which influence their emotions and behaviours (Beck, 1995; Epstein & Baucom, 2002). As such, interventions may help to increase clients' awareness that perceived partner appearance evaluations are more reflective of their own body dissatisfaction than their partners' actual feelings.

For example, if self-verification processes are in fact occurring, then body dissatisfaction predicts perceived partner dissatisfaction with the respondent's body because people selectively pay attention to information that confirms their negative appearance beliefs while ignoring or discounting contrary information from their partner. A commonly used CBT intervention involves helping people to identify their cognitive distortions, such as the bias described above. Accordingly, therapy might teach clients that they may be missing important cues that would help them to more accurately gauge their partner's true feelings about their bodies.

Behaviourally, therapists might highlight the need for individuals to provide positive appearance feedback to their partners. Direct verbal feedback reduces the likelihood of misinterpretation, which may help people to develop a more accurate understanding of their partner's beliefs. Providing positive comments about a partner's appearance is a

simple intervention that has the potential to be very effective, yet it may not occur as frequently as one might think. For example, in one study of 898 middle aged women, only 56% reported receiving positive body-related comments from their partners (McClaren, Kuh, Hardy, & Gauvin, 2004). Receiving positive appearance-related comments from partners is associated with higher levels of romantic relationship satisfaction among women (Carriere & Kluck, 2014), perhaps because it leads to more positive perceived partner appearance evaluations.

Of course, appearance-related feedback may also be communicated nonverbally through facial expressions, gaze patterns, behaviours, and so on. Indeed, according to a recent qualitative study, 79% of women and 74% of men reported that verbal and nonverbal body-related feedback from romantic partners could impact their sexual empowerment and fulfillment (e.g., feeling free to engage in a wider variety of sexual activities; Goldsmith & Byers, 2016).

Research has previously demonstrated the importance of communication to a couples' sexual and relationship satisfaction (Byers, 2005; Mark & Jozkowski, 2013). Others have reported that many men who were withholding or avoiding sex due to body image concerns did not share the reason for their withdrawal with their partners (Pope et al., 2000). Helping couples to understand that individuals' body image concerns may be linked to their sexual behaviours might help to mitigate feelings of rejection that can result from sexual avoidance or self-consciousness. Opening up a dialogue around these issues may help partners to avoid making assumptions so that sexual difficulties associated with body dissatisfaction are taken less personally.

Conclusions

Body image disturbance is commonly experienced by both women and men. Previous research suggests that body dissatisfaction might influence the quality of one's romantic relationships. The current study shed light on the nature of the body image and relationship satisfaction association. Results indicated that individuals who are dissatisfied with their body are more likely to project that dissatisfaction onto their romantic partner, regardless of their partner's actual feelings. These negative perceived partner appearance evaluations, which tend to be inaccurate, predict lower levels of sexual satisfaction, which in turn, predict lower levels of relationship satisfaction. Few gender differences emerged. The current findings illustrate the importance of including men in this area of study and adopting a dyadic approach when conducting research on relationships.

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APPENDICES

Appendix A
Psychology Participant Pool Description

Study Name: Individual Characteristics and Perceptions within Romantic Relationships

Researchers: Carolyne E. Lee & Cheryl D. Thomas

Duration: 60 minutes

Points: 1

Description: The purpose of this study is to investigate thoughts, feelings, and perceptions among long-term romantic partners. You and your romantic partner will be asked to independently complete a number of online questionnaires. In order to participate in the current study, you must be involved in an exclusive, heterosexual romantic relationship of at least 6 months' duration. You and your partner must be between 18 to 29 years of age and involved in a sexual relationship. Married couples and couples who have continuously lived together for more than 3 years are not permitted to participate. Please discuss participation with your partner; both partners must agree to participate. This study will take no more than 60 minutes of your time, and is worth 1 bonus point if you are registered in the Psychology Participant Pool and you are registered in one or more eligible psychology courses. If your partner is also registered in the pool, he or she will also receive 1 bonus point. If your partner is not registered in the pool, he or she will be entered into a draw to receive 1 of 10 $50 gift certificates to The Keg Steakhouse and Bar. To participate, sign up for a timeslot and a researcher will contact you at your UWindsor email address.

Eligibility Requirements: Must be involved in an unmarried, heterosexual, romantic relationship for at least 6 months; partners must be involved in a sexual relationship; both partners must be between 18 and 29 years old.

Appendix B
Community Advertisement

Are you involved in a heterosexual, unmarried, exclusive romantic and sexual relationship?

Have you been involved with your partner for at least 6 months?

Are both you and your partner between the ages of 18 and 29?

Eligible couples who agree to participate in an online study will be entered into a draw for a chance to win **1 of 10 $50 gift certificates to The Keg Steakhouse and Bar**.

Email Carolyne at **relationshipstudy123@gmail.com** to participate. Both partners must mutually agree to participate.

Any information that you provide in connection with this study will remain confidential. This study has been cleared by the University of Windsor Research Ethics Board.

Relationship Study
Contact Carolyne at
relationshipstudy123@gmail.com

Relationship Study
Contact Carolyne at
relationshipstudy123@gmail.com

Relationship Study
Contact Carolyne at
relationshipstudy123@gmail.com

Relationship Study
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relationshipstudy123@gmail.com

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relationshipstudy123@gmail.com

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Contact Carolyne at
relationshipstudy123@gmail.com

Relationship Study
Contact Carolyne at
relationshipstudy123@gmail.com

Relationship Study
Contact Carolyne at
relationshipstudy123@gmail.com

Appendix C
Facebook Advertisement

Are you involved in a heterosexual, unmarried, exclusive romantic and sexual relationship? Have you been involved with your partner for at least 6 months? Are you and your partner between the ages of 18 and 29?

Eligible couples who mutually agree to participate in an online study will be entered be into a draw for a chance to win 1 of 10 $50 gift certificates to The Keg Steakhouse and Bar.

Email Carolyne at **relationshipstudy123@gmail.com** to participate. Please discuss your willingness to participate with your partner. Both partners must mutually agree to participate. Any information that you provide in connection with this study will remain confidential.

Please feel free to pass on this information to others who may be interested in participating in this research.

Thank you!

Carolyne

Appendix D
Email to Initiating Partner

Hi [First Name],

Thanks again for your interest in my study. The purpose of the study is to investigate thoughts, feelings, and perceptions among long-term romantic partners. You and your romantic partner will be asked to *independently* complete a number of online questionnaires related to your relationship.

To participate, please visit http://uwindsor.fluidsurveys.com/s/characteristics-and-perceptions-in-relationships/ and enter the password onlinestudy555. Your unique research ID is [4-digit number]; **you will need to enter this research ID into the survey**. I will be sending your partner an email containing their unique research ID.

This study will take a maximum of 60 minutes for you to complete. Participants enrolled in the University of Windsor Psychology Participant Pool will receive 1 bonus point towards an eligible psychology course for their participation. All other participants will be entered into a draw for a chance to win **1 of 10 $50 gift certificates to The Keg Steakhouse and Bar**. You and your partner will be compensated separately.

Please complete the online questionnaires within the next 7 days. It is very important that you **complete the questionnaires separately from your partner** and **do not discuss your responses** until he or she has completed the study as well. Please answer these questions honestly. Any information that you provide in connection with this study will remain **confidential** and **will not be shared with your partner**. This study has been cleared by the Research Ethics Board at the University of Windsor.

Feel free to contact me if you have any questions or concerns. Please pass along this study information to others who may be interested in participating in this research.

Thanks!

Carolyne

Appendix E
Email to Noninitiating Partner

Hi [First Name],

Your romantic partner has indicated that you have agreed to participate in a study investigating thoughts, feelings, and perceptions among long-term romantic partners. You and your partner will be asked to *independently* complete a number of online questionnaires related to your relationship. To participate, please visit http://uwindsor.fluidsurveys.com/s/characteristics-and-perceptions-in-relationships/ and enter the password onlinestudy555. Your unique research ID is [4-digit number]; **you will need to enter this research ID into the survey**. I have sent your partner an email containing their unique research ID.

This study will take a maximum of 60 minutes for you to complete. Participants enrolled in the University of Windsor Psychology Participant Pool will receive 1 bonus point towards an eligible psychology course for their participation. All other participants will be entered into a draw for a chance to win **1 of 10 $50 gift certificates to The Keg Steakhouse and Bar**. You and your partner will be compensated separately.

Please complete the online questionnaires within the next 7 days. It is very important that you **complete the questionnaires separately from your partner** and **do not discuss your responses** until he or she has completed the study as well. Please answer these questions honestly. Any information that you provide in connection with this study will remain **confidential** and **will not be shared with your partner**. This study has been cleared by the Research Ethics Board at the University of Windsor.

Feel free to contact me if you have any questions or concerns. Please pass along this study information to others who may be interested in participating in this research.

Thanks!

Carolyne

Appendix F
Reminder Email for Study Completion

Hello [First Name of Respondent],

You are receiving this email because you have not yet completed the online study investigating thoughts, feelings, and perceptions among long-term romantic partners. This is just a reminder email should you still be interested in participating in the study. Below is the information that you will need to participate.

Thanks for your interest in my project!

Carolyne

Note. The original email with study website, login, and password information [see Appendix D or E] will be forwarded.

Appendix G
Consent Form

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Individual Characteristics and Perceptions within Romantic Relationships

You are asked to participate in a research study conducted by Carolyne E. Lee and Dr. Cheryl D. Thomas from the Psychology Department at the University of Windsor. Results will contribute to Carolyne E. Lee's doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact Dr. Cheryl D. Thomas (cdthomas@uwindsor.ca; 519-253-3000, ext. 2252).

PURPOSE OF THE STUDY

The purpose of this study is to investigate thoughts, feelings, and perceptions among long-term romantic partners.

PROCEDURES

If you volunteer to participate in this study, you will be asked to complete a number of online questionnaires that inquire about your current romantic relationship. Your partner will also complete a number of online questionnaires. <u>Please complete the questionnaires separately from your partner and do not discuss your responses until you have both completed the study.</u> This study will take no longer than 60 minutes per partner. Please complete the online questionnaires within 7 days of receiving your login information.

POTENTIAL RISKS AND DISCOMFORTS

Some people may find questions about their romantic relationship and experiences mildly distressing. Participation in this study may influence the way you or your partner think and feel about your relationship. You may want to know how your partner responded to the study questionnaires and vice versa. We encourage you and your partner to keep your responses private; discussing your responses could potentially lead to disagreements or conflict with your partner. However, whether you and your partner share your responses with each other is ultimately your decision.

If you do experience mild distress, please visit http://www.cmha.ca/mental-health/find-help/ to find mental health services within Canada, http://www.mentalhealthhelpline.ca/Home/Call for information about mental health services in Ontario, http://www.partnersformh.ca/ resources/find-help/crisis-centres-across-canada for a list of distress lines across Canada, or http://www.therelationshipinstitute.org/resources-marriage-counseling-information.html for resources about romantic relationships.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The information gathered may further the understanding of individual characteristics and perceptions within romantic relationships. Findings may contribute to the development of couples counselling. Participation in this study may also positively influence the way you or your partner think or feel about your relationship.

COMPENSATION FOR PARTICIPATION

Participants will receive 1 bonus point for 60 minutes of participations towards the Psychology Participant Pool, if registered in the Pool and enrolled in one or more eligible courses.

If you are not enrolled in the University of Windsor Psychology Participant Pool, you will have your name entered into a draw for a chance to win 1 of 10 $50 gift certificates to The Keg Steakhouse and Bar. You will be asked to provide a mailing address where compensation will be mailed if you win the draw.

Compensation (i.e., bonus credits or entry into the draw) will only be awarded if a meaningful portion of the study is completed (i.e., approximately 90% of questions answered).

CONFIDENTIALITY

Any identifying information that you provide in connection with this study will remain confidential and will not be disclosed without your permission, except as may be required by the law or professional guidelines for psychologists. You have been assigned a research identification number to ensure that your data remains confidential.

Your survey responses will not be attached to your name. Your survey responses will be stored in a non-identifiable data file with other participants' responses, separate from your personal information. Survey responses and compensation data will be indirectly linked to each other via a research identification number, only for the purpose of ensuring that a meaningful portion of the survey is completed prior to compensation. Your responses will not be shared with your partner.

Only summaries of group data are released; individual responses are not reported. Ethical research practice requires data records to be kept in a secure database for five years subsequent to the completion of the study.

PARTICIPATION AND WITHDRAWAL

If you volunteer to be in this study, you may withdraw at any time without penalty. You may also refuse to answer any questions that you do not want to answer and still remain

in the study; however, compensation will only be provided if approximately 90% of questions are answered. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Should you decide that you do not want 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

A summary of the results of this study will be available on the University of Windsor Research Ethics Board website:

Web address: http://www.uwindsor.ca/reb

Date when results are available: September 2015.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies, publications, and presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; email: ethics@uwindsor.ca.

SIGNATURE OF RESEARCH PARTICIPANT

I understand the information provided for the study Individual Characteristics and Perceptions within Romantic Relationships as described herein. My questions have been answered to my satisfaction, and by clicking "I Agree," I am giving consent to participate in this study. I have been given the opportunity to print this form.

["I agree" Button]

Remember to print this page for your records

Please enter your unique research ID that was provided to you via email

_____

Appendix H

Post-Study Information

Thank you for your participation!

To ensure that your responses to the online study questionnaires remain private, it is recommended that you take a moment to clear your web browser's cache and cookies. Steps to do so differ by web browser (e.g., Firefox, Chrome) and operating system (e.g., Windows, Mac). The following website provides detailed directions for a variety of browsers and operating systems: https://kb.wisc.edu/page.php?id=12384.

If you are experiencing mild distress as a result of this study, please visit the following websites:

http://www.cmha.ca/mental-health/find-help
(to find mental health services within Canada)

http://www.mentalhealthhelpline.ca/Home/Call
(for free and confidential information about mental health services in Ontario)

http://www.partnersformh.ca/resources/find-help/crisis-centres-across-canada
(for a list of distress lines across Canada)

http://www.therelationshipinstitute.org/resources-marriage-counseling-information.html
(for a list of resources about romantic relationships)

A summary of the results of this study will be available on the University of Windsor Research Ethics Board website (http://www.uwindsor.ca/reb) in September 2015.

Please pass along the email address <u>relationshipstudy123@gmail.com</u> to others who may be interested in participating in this research.

Appendix I
Demographic Questionnaire

What is your gender? _____

What is your racial/ethnic identity? (Check all that apply):
    [ ] Black or African-Canadian or Caribbean-Canadian
    [ ] White or European-Canadian
    [ ] First Nations or Aboriginal or Inuit or Métis
    [ ] East Asian (e.g., Chinese, Korean) or Pacific Islander
    [ ] Middle Eastern (e.g., Arab, Persian)
    [ ] South Asian (e.g., Indian, Pakistani)
    [ ] Other (Please specify): _____

In which country do you currently reside?

    [ ] Canada
    [ ] United States
    [ ] Other (Please specify): _____

Are you currently enrolled as a student at the University of Windsor?   YES   NO

Are you currently enrolled as a student at another college or university?   YES   NO

If you are a university or college student, what is your year of study?
    Undergraduate: Graduate:
        [ ] First   [ ] Masters
        [ ] Second   [ ] PhD
        [ ] Third   [ ] Other: _____
        [ ] Fourth
        [ ] Fifth
        [ ] Other: _____

Who do you live with?
    [ ] Nobody
    [ ] Parents or other family members
    [ ] Roommate(s)
    [ ] Romantic partner
    [ ] Other (Please specify): _____

What is your parents' marital status? (Check all that apply):
        [ ] Married to each other
        [ ] Divorced from each other
        [ ] Separated from each other
        [ ] Common-law relationship with each other
        [ ] Remarried
        [ ] Widowed
        [ ] Other (Please specify): _____

What is your own yearly income?
        [ ] Under $20,000
        [ ] $20,000 to $39,000
        [ ] $40,000 to $59,000
        [ ] $60,000 to $79,000
        [ ] $80,000 to $99,000
        [ ] $100,000 or Greater
        [ ] Prefer not to answer

What is the highest level of education you have completed?
        [ ] Less than high school
        [ ] High school diploma
        [ ] Vocational/technical school
        [ ] College diploma
        [ ] Bachelor's degree
        [ ] Master's degree
        [ ] Doctoral degree
        [ ] Professional degree (e.g., M.D.)
        [ ] Other (Please specify): _____

Have you ever been diagnosed with an Eating Disorder (e.g., Anorexia Nervosa)?   YES   NO

If yes, do you currently suffer from an Eating Disorder?   YES   NO

What is your age? _____

What is your height? _____

What is your weight? _____

What is your sexual orientation?

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

What is your current romantic partner's gender?
    [ ] Male
    [ ] Female
    [ ] Other (Please specify): _____

What is your romantic partner's age? _____

How would you classify your relationship with your current partner?
    [ ] Casually dating
    [ ] Seriously dating
    [ ] Engaged
    [ ] Married
    [ ] Other (Please specify): _____

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

Is your current relationship exclusive/monogamous?   YES   NO

Are you involved in a long distance relationship?   YES   NO

Have you had sex with your current partner?   YES   NO

If you live with your current partner, when did you first start living together? ____ / _____
                                                                                                  MM /
YYYY

Do you have any children?   YES   NO

    If yes, specify how many children you have: _____

    Is your current romantic partner the biological parent of one or more of your children?   YES   NO

Appendix J

Distinguishable Actor-Partner Interdependence Mediation Model (APIMeM)
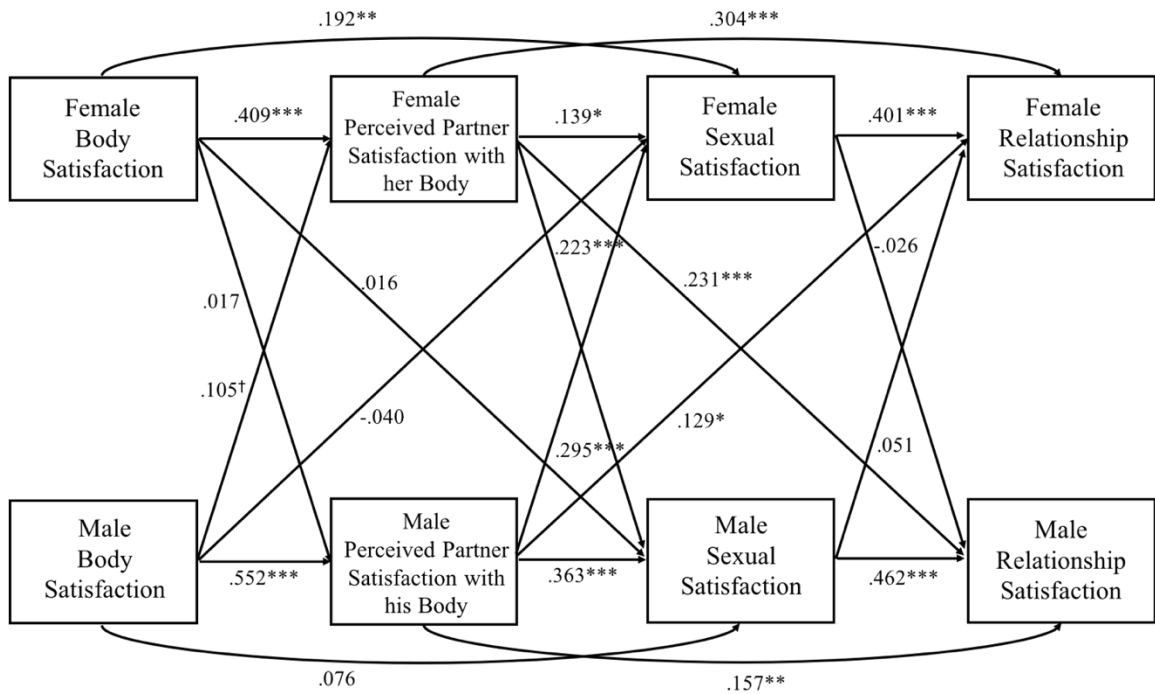Estimating Separate Effects for Women and Men

Figure J. Distinguishable actor-partner interdependence mediation model (APIMeM) in which perceived partner satisfaction with the respondent's body and sexual satisfaction completely mediate the association between body satisfaction and relationship satisfaction. The model provided a good fit to the data: $\chi^2 (4) = 4.525$, $p = .340$, CFI = 0.999, TLI = 0.994, RMSEA = 0.023, SRMR = 0.011. The actor-actor-actor indirect effect and actor-partner-actor indirect effect were significant for both genders. Standardized estimates are shown. Correlations between predictor variables and errors of the outcome variables are not shown for the purpose of readability.
$^{†}p < .10.$ $^{*}p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

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