

**When and why does female dieting become pernicious?  
The role of individual differences and partner support  
in romantic relationships**

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By

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## **Abstract**

This study investigated the intrapersonal and interpersonal context of female dieting and partner support for dieting in 44 heterosexual couples. Participants completed questionnaires assessing self and relationship functioning, dieting levels and eating disordered attitudes, and weight-loss support frequency and helpfulness, in both a cross-sectional and longitudinal study. As predicted, a) higher levels of unhealthy dieting were significantly related to more negative views of the self (e.g., lower self-esteem), and b) lower perceived levels of support from the partner were significantly related to higher levels of eating-disordered attitudes, anxious attachment, and lower relationship satisfaction. However, testing more complex causal models showed that self-esteem played a pivotal role. First, tests confirmed that the impact of self-esteem on unhealthy dieting was mediated by more disordered attitudes to eating. Second, those with low-self-esteem were much less likely to diet in an unhealthy fashion with more frequent and positive partner support, whereas high self-esteem women were not influenced by the support offered by their partners. These findings did not apply to the frequency of healthy dieting, with the important exception that more frequent partner support encouraged healthier dieting, and they held up when plausible third variables were statistically controlled. The findings suggest that dieting behaviour is influenced both by individual differences and the nature of support in intimate relationship contexts.

## **Introduction**

In Western contemporary cultures obesity is often described as an epidemic, and at the same time the prevalence of dysfunctional eating attitudes and behaviours has been steadily climbing (Battle & Brownell, 1996). Our culture embodies what can be described as a toxic mix - we are both a fast-food culture which encourages unhealthy patterns of eating and an intolerant culture which prides thinness over diversity of body weights and shapes (Irving & Neumark-Sztainer, 2002). Against this backdrop, the study of weight-loss efforts is especially relevant.

Weight-loss attempts do not occur in isolation. They occur first within the context of individual differences in psychological functioning and experiences regarding weight and the ability to control weight. They occur second within the context of the social situation including culture, friends, family, and romantic relationships. However, despite the importance of considering the context of women's diets, relatively little research attention has been paid to the psychological and interpersonal context in which dieting occurs. In particular, there is little research on diets in the context of romantic relationships and the role of intimate partners in supporting females' diets. Given that intimate partners play a special role in terms of social support, and that a key motivation for dieting is to look more attractive (Brink & Ferguson, 1998), this remains an important gap in the literature. The current research studies the role of individual differences important in predicting dieting and eating disorders (e.g., self-esteem, attachment working models), but in the context of intimate relationships, and with a special focus on the support provided by partners.

To introduce the current research I will first broadly discuss dieting, focusing on the difference between healthy and unhealthy dieting, the role of eating disordered attitudes, and the

associations with self and relationship functioning. Second, I will broadly discuss social support, focusing on the role of self and relationship functioning in perceptions of support. Third, I will discuss weight-loss support, focusing on the outcomes in terms of weight-loss and eating disordered behaviours. Finally, I briefly describe the current study and outline the hypotheses.

## **Dieting**

### ***Weight-Loss Motivation***

Dissatisfaction with one's body and periodic dieting attempts are so common among women that they may be considered normal (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997; Polivy & Herman, 1987). More women than men want to lose weight, and this weight-loss desire is the driving force behind the higher levels of body dissatisfaction and eating problems in women (Kashubeck-West, Mintz, & Weigold, 2005). But why do so many women want to lose weight? French and Jeffery (1994) reported that weight status is strongly linked to dieting attempts. Overweight women are more likely to have a history of dieting, to have participated in a formal weight loss program, and to be currently dieting to lose weight. However, within Kashubeck-West and colleague's study of gender and weight-loss desire, although women more often wanted to lose weight, it was the men who were more often overweight. With the societal shift to a preference for a thin physique (Wiseman, Gray, Mosimann, & Athrens, 1992), normal and underweight women who have no health reasons to lose weight are now dieting at a startling rate (Neumark-Sztainer, Sherwood, French, & Jeffery, 1999). Dieting also occurs more frequently in situations where physical appearance is emphasised, such as college campuses and

amongst models and actors (French & Jeffery, 1994). This highlights the role of societal pressure in motivating weight-loss efforts.

*Chasing the thin ideal.* There are several reasons why women feel it is important to fit the physical ideal dictated by society. Intrapersonal factors are related in that women are likely to see their weight status as a defining aspect of their value (Grover, Keel, & Mitchell, 2003). Dieting then may be an attempt to feel better about themselves in global terms by feeling better about their weight. This notion is supported in that women who turn to extreme dieting techniques generally have lower self-esteem (Boyes, Fletcher, & Latner, 2007).

There are also interpersonal reasons why women may chase the thin ideal. In reality, overweight women are discriminated against in society, and they are judged more negatively on characteristics such as warmth, intelligence, and competence (Tiggemann & Rothblum, 1997). Dieting may therefore represent attempts to avoid such negative social consequences.

At an interpersonal level, physical attractiveness is an important attribute for females attracting a potential partner (Fletcher, Tither, O'Loughlin, Friesen, & Overall, 2004), and thinner women are judged by both men and women as being more desirable in a romantic relationship (Furnham, Dias, & McClelland, 1998). Thus, women may diet in order to increase their chances of attracting or retaining a mate. Supporting the link between dieting and romantic aspirations, dieters are more likely than non-dieters to attribute romantic success to thinness (Jarry, Polivy, Herman, Arrowood, & Pliner, 2006). Further, married women do not engage as frequently or intensely in dieting as do single women. Keel, Baxter, Heatherton, and Joiner (2007) found amongst a cohort of women followed from late adolescence to midlife that married women displayed a greater decrease in disordered eating than unmarried women and Vogeltanz-Holm et

al. (2000) found that remaining single was a predictor of more intense dieting at the five-year follow-up for women in their thirties. However, when women perceive that they do not meet their partner's ideal weight (regardless of their partner's real thoughts on the matter), they are less satisfied with their bodies (Markey, Markey, & Birch, 2004) and they diet more (Tantleff-Dunn & Thompson, 1995). Thus it is important to consider the relational context in which females' dieting occurs.

### ***Weight-Loss Efforts***

*Weight-loss treatment programs.* Numerous weight-loss treatment programs have been developed with a range of success in their outcomes. These treatments range from purely physical treatments such as drug and surgery interventions, to straight psychological interventions. Psychotherapy for weight-loss tends to utilise cognitive-behavioural therapy techniques, focusing on healthy cognitions surrounding food, eating, and exercise (Blaine, Rodman, & Newman, 2007). These interventions may also involve social support components such as peer support or spousal support. The impact of these programs will be discussed in detail later, but a recent review and meta-analysis by Blaine et al. (2007) found that overall weight-loss treatments have a small effect on short-term weight-loss and little effect on long-term weight-loss. More specifically, however, drug and surgery weight-loss treatments were more effective in producing short and long-term weight-loss than psychotherapeutic treatments.

*Individual weight-loss efforts.* However, the study of weight loss programs has limited utility for understanding the psychology of dieting behaviour, given that very few dieting women report use of a supervised weight loss group or diet centre (French, Perry, Leon, & Fulkerson, 1995). Moreover, dieting is very common among women. French and Jeffery (1994) found that

61% of adults had reported dieting in their lifetime, 32% were currently trying to lose weight, and 20% were currently dieting to lose weight.

Individual weight-loss attempts tend to primarily consist of decreasing caloric intake and increasing exercise (French & Jeffery, 1994). In terms of caloric restriction, dieters report they most commonly reduce the frequency of eating between meals and reduce their portion sizes at meal times (Presnell, Stice, & Tristan, 2008). There is evidence that dieters employ both healthy (e.g. reducing fat intake, increasing exercise, decreasing snacking) and unhealthy dieting techniques (e.g. fasting, diet pills, vomiting) (French et al., 1995). While unhealthy dieting techniques are less commonly employed, they are by no means rare. Among Australian adolescent girls, Grigg, Bowman, and Redman (1996) found that while the majority were exercising more and eating less fatty, sugary foods to lose weight, for most this was not the only weight reduction technique used - 57% of the young women were classified as practicing unhealthy dieting techniques such as inappropriately cutting out foods, skipping meals, and fad dieting, and 36% were classified as using extreme dieting techniques such as crash dieting, fasting, slimming tablets, and laxatives.

Research suggests that such self-directed weight-loss attempts are relatively ineffective at reducing weight in the short-term (French & Jeffery, 1994; Presnell et al., 2008). Further, dieting attempts in adolescence are counter-intuitively related to weight gain in adulthood (French & Jeffery, 1994). Stice, Cameron, Killen, Hayward, and Barr Taylor (1999) found that adolescents who engaged in more dieting behaviours actually put on more weight over the following four years. These results remained even when weight status was controlled for, indicating that weight gain in dieting adolescents is not simply due to being overweight to begin with. Stice and

colleagues (1999) suggest a number of reasons for the ineffectiveness of individual dieting attempts. First, women may perceive they are dieting when in fact they are not effectively reducing caloric intake and increasing exercise to a degree required for weight-loss. Second, dieting may in fact be a causal factor in weight gain. Increased restriction of food intake is related to subsequent binge episodes and consequent weight gain (Polivy & Herman, 1985; Stice et al., 1999). Third, dieting may be a marker for later weight gain if women diet when they are aware of a family history of obesity and are attempting to prevent their own inevitable weight gain.

### ***Dieting and Eating Disorders***

*Dieting techniques and eating disorders.* According to the *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed., Text Revision; DSM-IV-TR), eating disorders are characterized by severe disturbances in both eating behaviour and the perception of body shape and weight (American Psychiatric Association, 2000). Eating Disturbances may include restriction of food intake, binge eating, and compensatory mechanisms such as self-induced vomiting, laxative misuse, and excessive exercise. Diagnostic criteria for the eating disorders are outlined fully in Appendix A. Dieting may be considered sustained intentional restriction of caloric intake in order to lose weight (Presnell et al., 2008), and as mentioned earlier dieting behaviours can be healthy (e.g. decreasing fat intake, increasing exercise) or unhealthy/disordered (e.g. skipping meals, self-induced vomiting) (French et al., 1995).

Dieting and eating disorders are inextricably linked, with prospective studies indicating that dieting is a precursor to the development of eating disorders (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Patton, Johnson-Sabine, Wood, Mann, and Wakeling (1990) found that British adolescent girls who were dieting had an eight-fold increase risk of later developing

an eating disorder. The continuity model of eating disorders suggests that there are only quantitative differences between dieters and eating-disordered women, and that development of an eating disorder occurs when extreme manifestations of common dieting behaviours occur (Gleaves, Brown, & Warren, 2004; Polivy & Herman, 1987). In accordance with this notion, a number of similarities exist between eating disorders and common dieting. By definition both involve an effect on eating patterns, in both there is a focus on weight and shape, and both represent a response to dissatisfaction with one's body the way it is perceived to be (Kashubeck-West et al., 2005).

On an eating pathology continuum, unhealthy dieting brings women closer to an eating disorder than healthy dieting. By definition, unhealthy dieting includes some of the same behaviours outlined in the DSM-IV-TR as being compensatory behaviours in eating disorders (e.g. self-induced vomiting, laxative misuse). Further, the eating disordered nature of unhealthy dieting was demonstrated by Markey and Markey (2005), who showed that unhealthy dieting is more likely than healthy dieting to be a result of an increased drive to be thin despite not being overweight. This drive for thinness is an established feature of eating disorders (Levitt, 2003). It appears then that more dysfunctional attitudes towards eating are related to the use of extreme and unhealthy dieting behaviours in women's weight loss attempts.

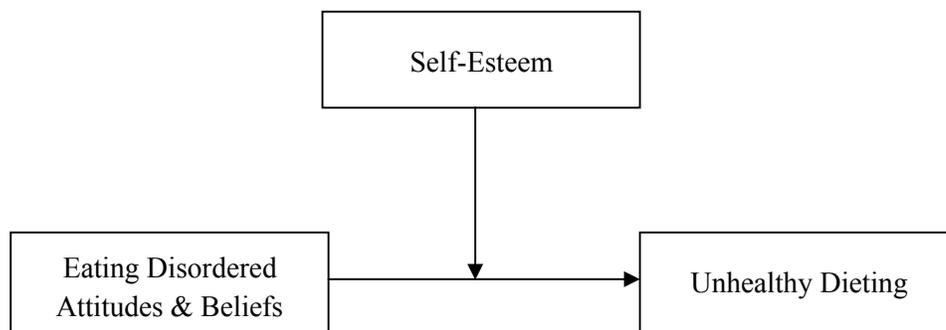
The causal relationship between eating disordered attitudes and unhealthy dieting techniques could run both ways. Women who have dysfunctional attitudes towards eating, weight, and their body may resort to unhealthy dieting techniques in an attempt to attain their thin ideal and ease concerns about their body. However, unhealthy dieting techniques may result in a binge-purge cycle and ultimately weight gain (Polivy & Herman, 1985), which could in turn

produce greater body dissatisfaction and a firmer resolve to chase the thin ideal. For the current research it was predicted that women who reported more eating disordered attitudes and beliefs would engage in higher levels of unhealthy dieting. It was not expected that this relationship would be found for healthy dieting.

*Self-esteem and eating disorders.* Low self-esteem has repeatedly been found in individuals who display eating disordered behaviours (e.g. Button, Loan, Davies, & Sonuga-Barke, 1997; Granillo, Jones-Rodriguez, & Carvajal, 2005). This association has been noted both concurrently, and with self-esteem as a predictor of later eating problems (Button, Sonuga-Barke, Davies, & Thompson, 1996; Jacobi et al., 2004). Self-esteem also frequently appears in theories of the etiology of eating disorders. For example, the recent research-based “transdiagnostic” approach to eating disorders proposed by Fairburn, Cooper, and Shafran (2003) posits first that most eating disorder patients have low self-esteem due to failure to control their eating, and second that the more severe eating disorder patients suffer from a “core low self-esteem” which is a pervasive negative view of themselves. This indicates that general low self-esteem may exacerbate tendencies towards eating disordered attitudes and beliefs.

Further, levels of self-esteem have been found to moderate the impact of risk factors for eating disorders on eating pathology. Lower levels of self-esteem have been found to increase the strength of the link between perfectionism and perceived weight-status and the development of bulimic symptomatology (Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999) and the link between body dissatisfaction and eating pathology (Twamley & Davis, 1999). Taken together, and speculating further, it seems likely that for low-esteem individuals their negative attitudes and beliefs (perhaps impulsively) feed through into their behaviour, whereas those with high self-

esteem manage to control and suppress their negative attitudes and beliefs and, thus, prevent them from leading to aberrant eating behaviour. Thus, in the current research it was expected that women who had low self-esteem would have a much stronger positive link between eating disordered attitudes and disordered dieting behaviours, than those who had high self-esteem. That is, it was expected that self-esteem would moderate the link between eating disordered attitudes and beliefs and unhealthy dieting (see Figure 1).



*Figure 1.* Model of the link between eating disordered attitudes and beliefs and unhealthy dieting moderated by self-esteem.

### ***Dieting, the Self, and Relationship Functioning: The Role of Individual Differences***

*Dieting and self functioning.* Women of all ages and stages diet in a periodic fashion using healthy dieting techniques. In fact, attempting to lose weight through strategies such as consuming less fat and increasing exercise is considered a normal thing to do in contemporary western culture (Polivy & Herman, 1987). However, more extreme dieting techniques (e.g. fasting, self-induced vomiting) are not usually considered normal. Indeed, these more extreme dieting strategies have been associated with several negative psychological outcomes, including depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000), low self-esteem (Boyes et al., 2007), and even increased suicidal ideation and attempts (Neumark-Sztainer, Story, Dixon, &

Murray, 1998). Further, the use of these dieting techniques is related to negative psychological outcomes (such as depression) regardless of weight status (Crow, Eisenberg, Story, & Neumark-Sztainer, 2006).

It is possible that women may initially use healthy dieting behaviours in order to lose weight. However, when these strategies are not perceived as successful, women may turn to unhealthy dieting techniques while in a psychologically vulnerable state. Accordingly, prospective research indicates that dieting increases depressive symptoms (Stice & Bearman, 2001) and that this may be due to the failure of diets in bringing about weight-loss resulting in a sense of failure more generally (Koenig & Wasserman, 1995). Further, research indicates a bi-directional pathway in that depression also explains and causes some of the variability in eating pathology in women (Koenig & Wasserman, 1995).

It was predicted in this study that women who reported higher levels of healthy dieting would not differ on measures of self functioning (depression, self-esteem). However, it was predicted that women who were doing more unhealthy dieting would have lower self-esteem and be more depressed.

*Dieting and attachment style.* There is an abundance of research and theorising on attachment in adulthood (Mikulincer & Shaver, 2007). Thus, I will provide only a very brief overview here. Every child forms an attachment style based on their experiences of trustworthiness and support provided by their primary caregiver. This attachment style is a “working model” of the self and significant others which dictates a person’s expectations of others’ behaviour within relationships. These attachment styles continue into adulthood, affecting thoughts, feelings, and behaviours in relationships.

Attachment styles were initially divided by Ainsworth, Blehar, Waters, and Wall (1978) based on observations of infants, when separated briefly from their primary caregiver, into three styles – secure, avoidant, and anxious. Initial attempts at measuring attachment style in adulthood required participants to choose between a secure, ambivalent (anxious), and avoidant attachment style (Hazan & Shaver, 1987). However, this measurement method assumed that people fit into just one of these attachment styles, and research has now indicated this is not the case. Psychometric work using factor analysis has revealed that attachment is best described in terms of levels of two relatively independent dimensions – attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver, 1998). High levels of attachment anxiety are demonstrated in excessive concern about being rejected or unloved by others and feeling conflicted as to whether others can be counted on in a relationship. High levels of attachment avoidance are demonstrated in a tendency to avoid or withdraw from closeness in relationships (Simpson, Rholes, & Phillips, 1996). Attachment security is expressed in terms of low levels of both attachment anxiety and avoidance.

Research has repeatedly demonstrated a link between insecure attachment and eating disordered behaviours (Broberg, Hjalms, & Nevenon, 2001; Elgin & Pritchard, 2006). It has been suggested that insecure attachment affects health behaviour partly through the lower self-esteem seen in insecurely attached individuals (Huntsinger & Luecken, 2004). However, insecure attachment also may play a role in unhealthy dieting due to the higher levels of body dissatisfaction (Cash, Theriault, & Annis, 2004; Elgin & Pritchard, 2006) and weight concerns (Sharpe, Killen, Bryson, Shisslak, Estes, Gray et al., 1998) seen in these women. These findings

once more demonstrate the intricate relationship between health behaviours and both psychological and interpersonal functioning.

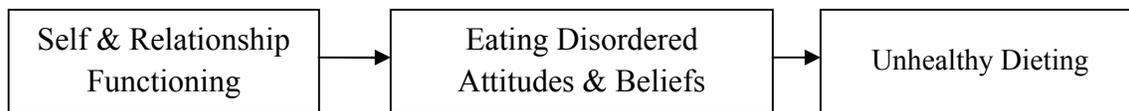
Anxious attachment is probably more strongly related to eating disordered behaviour than avoidant attachment (Broberg et al., 2001). Women high in anxious attachment are plagued by doubts about their own worth and the availability of support from others. On the other hand women high in avoidant attachment tend to distrust others but often have healthy levels of self-esteem and confidence in themselves (Bartholomew, 1990). The difference in feelings about the self for anxious women may contribute to a more negative body image, and ultimately higher levels of unhealthy dieting. Thus, for the current research it was predicted that women who reported more anxious (but not avoidant) attachment in romantic relationships would engage in higher levels of unhealthy dieting. Once again, it was not expected that this relationship would be found for healthy dieting.

*Dieting and relationship satisfaction.* As discussed earlier, weight-loss efforts occur in interpersonal contexts in which other people influence women's body satisfaction and dieting behaviours. One prime motivation discussed above for female dieting is to attract or retain a potential mate. In a consistent vein Markey, Markey, and Birch (2001) found that women in less satisfying relationships did more unhealthy dieting, but not more healthy dieting. In their study healthy dieting was related only to being overweight and having more weight concerns. Unhealthy dieting however was related to being more depressed, having lower self-esteem, and higher levels of marital disharmony. Consistently, Schafer, Keith, and Schafer (1994) found that poor marital interaction results in psychological stress which in turn contributes to wives' feelings of helplessness in their ability to effectively maintain a diet. Markey et al. (2001)

postulated that perception of lack of love and understanding by partners causes despair or feelings of worthlessness, which could be exhibited in self-punishing unhealthy dieting practices. It is also plausible that women who perceive their relationship as unsatisfying may be motivated by evolutionary mechanisms to once again pursue the ideal of thinness in order to either rekindle the interest of their partner, or to attract a new mate. These findings again emphasise the psychologically motivated nature of unhealthy dieting outlined above, while also noting the interpersonally motivated nature of unhealthy dieting. For the current research it was predicted that women who were engaging in higher levels of unhealthy dieting would report finding their relationship less satisfying, as would their male partners. It was not expected that this association would be found for healthy dieting.

*The role of eating disordered attitudes.* Evidence outlined above demonstrates both that lower levels of self and relationship functioning are related to unhealthy dieting, and that eating disordered attitudes are related to unhealthy dieting. However, the relationship between these dysfunctional attitudes and dieting behaviours is less clear and less well researched. Neumark-Sztainer, Wall, Story, and Perry (2003) used Structural Equation Modelling to test the contribution to unhealthy dieting of various psychosocial risk factors, and found that weight and body concerns (an aspect of eating disordered attitudes) were the primary predictor of unhealthy weight control behaviours, with other psychosocial variables having an impact only through these weight and shape concerns. Further, Johnson and Wardle (2005) demonstrated that the link with dietary restraint of stress, depression, and self-esteem was accounted for almost entirely by body dissatisfaction (another key eating disordered attitude).

The study of these factors has concentrated on investigating correlational or causal links between individual factors (e.g., depression) and dieting behaviours. In this study, I tested a plausible causal model, in which measures of self and relationship functioning (e.g., self-esteem) exert an influence on unhealthy dieting via their influence (at least in part) through a mediating variable; namely attitudes and beliefs about dieting – see Figure 2. It was expected that women who had more negative views and affect related to the self (lower self-esteem, higher depression, higher attachment anxiety) and in their relationship (lower relationship satisfaction) would engage in higher levels of unhealthy/disordered dieting as a function of their higher levels of eating disordered attitudes and beliefs. That is, eating disordered attitudes and beliefs were expected to play a mediating role (see Figure 2).



*Figure 2:* Mediating model of the link between self and relationship functioning (depression, self-esteem, attachment, relationship satisfaction), eating disordered attitudes and beliefs, and unhealthy dieting.

## **Social Support**

### ***Social Support Conceptualisations***

Social support has been conceptualized in a number of ways, ranging from broad definitions about exchanges between individuals to specific taxonomies defining distinct support categories. Broadly defined, social support involves receiving advice, expressions of empathy and concern, and tangible aid from one's social network (Hogan, Linden, & Najarian, 2002). Furthermore, social support involves the subjective perceptions of the individual about the

received support (Hogan et al., 2002). However, the realisation that individuals do not benefit equally from the range of possible supportive behaviours (Cohen & McKay, 1984) led House, Kahn, McLeod, and Williams (1985) to develop a taxonomy of social support. A four-category taxonomy of social support in health behaviours was proposed, including emotional, instrumental, informational, and appraisal support. Emotional support involves the communication of caring and concern, informational support involves the provision of advice and guidance, instrumental support involves the provision of tangible or material aid, and appraisal support involves affirmation and feedback.

### ***Social Support and Intimate Relationships***

A key source of social support is one's intimate partner, with many adults coming to rely heavily on their romantic partner as a source of support and care. These are often the people relied on to discuss every-day difficulties such as stress at work, difficulties with friends and families, and even struggles with controlling eating and exercise in order to lose weight. More support is generally expected within an intimate relationship context than other relationships, and social support behaviours are considered an important aspect of intimate relationships (Pasch, Bradbury, & Sullivan, 1997), so much so that provision of support within this context protects against marital dysfunction (Pasch & Bradbury, 1998). There is a probably a bidirectional causal association between intimate relationships and support, with the relationship providing a prime opportunity for the fulfilment of support needs, and support fulfilment impacting on the closeness and quality of an intimate relationship (Cutrona, 1996).

Social support may be particularly important in the context of an intimate relationship for a number of reasons. First, support behaviours within an intimate relationship may be

considered the adult version of an infant seeking support from their primary caregiver. Intimate partners become key attachment figures, with support provision an important aspect of the attachment relationship (Bartholomew, Cobb, & Poole, 1997). Support is sought in two formats within both relationship contexts. The “safe haven” function of support within an attachment relationship presents as proximity seeking in an infant-caregiver relationship and as comfort seeking in times of distress in a romantic relationship. The “secure base” function of support presents as exploration of an environment in infants and as elicitation of support during goal-striving tasks in romantic relationships (Bartholomew et al., 1997). Higher levels of either of these support types are components of healthy intimate relationships (Collins & Feeney, 2000; Feeney, 2004 ). Second, Dehle, Larsen, and Landers (2001) note that partners are usually similar in values and characteristics and may have faced similar stressors; thus, their support regarding a given stressor or goal may be seen as particularly valuable. Third, individuals in close relationships are aware of one another’s needs and thus can provide support that is tailored to the specific requirements of the individual and the situation (Cutrona, Cohen, & Igram, 1990).

Various ways of expressing support may be received differently within an intimate relationship context (Beach & Gupta, 2006). For example, individuals listening to their partners’ worries about lack of finances may provide the best support through supplying information or advice on how to acquire money. On the other hand, individuals listening to their partners discuss exhaustion from a busy day at work may provide the best support through the emotional means of displaying caring and concern. Accordingly, research indicates that support provided to one’s partner is more beneficial if it matches the goals of the support seeker, which are a function of the nature of the stressor and the preferences of the support seeker (Cutrona & Russell, 1990).

Cutrona, Shaffer, Wesner, and Gardner (2007) found that when disclosure of emotions was followed by emotional support, and requests for information were followed by informational support, the participant's partners were perceived as more sensitive, and that this predicted higher levels of relationship satisfaction.

There is also evidence that different types of support in and of themselves can have different effects on the recipient. Broadly, non-directive, nurturing support is received more favourably within an intimate relationship context than directive, action facilitating support (Beach & Gupta, 2006; Cutrona et al., 1990). However, evidence indicates that although these emotionally supportive behaviours are perceived as more helpful, husbands are more likely to provide the action facilitating support (Beach & Gupta, 2006; Carels & Baucom, 1999).

### ***Social Support, the Self, and Relationship Functioning: The Role of Individual Differences***

While the literature on social support and its relation to intrapersonal and interpersonal functioning is ever increasing, there is a complete lack of literature on the role of self and relationship functioning in weight-loss specific support. As such, the broad literature will be discussed and hypotheses regarding weight-loss support will be based on the more general social support literature.

*Perceptions of social support.* Behaviours displayed within a romantic relationship may be interpreted in a variety of ways. In response to hearing about his wife's stressful day at work, a husband's response of "don't worry honey, I'm sure you handled it the best you could" may be interpreted by one woman as supportive and another as patronising. Perception of social support is the degree to which a person feels supported and cared for, and is a function of not only the supportive behaviours provided, but the context in which these behaviours occur. Gurung,

Sarason, and Sarason (1997) highlighted the roles of the support provider and receiver's characteristics in support perceptions, along with their views of their relationship, and the general situation in which the support occurs. It is important to consider these contextual factors in support perception as research indicates that perceptions of support rather than actual support received are related to mental health outcomes (Dunkel-Schetter & Bennett, 1990).

*Social support and self functioning.* Higher levels of social support are generally related to better physical and psychological functioning (House, Landis, & Umberson, 1988). Individuals who report feeling supported are less lonely, less depressed, and have higher self-esteem (Brown, Andrews, Harris, Adler, & Bridge, 1986; Davis, Morris, & Kraus, 1998; Dehle et al., 2001).

Psychological characteristics may be related to social support in a number of ways. First, social support appears to play a protective role in buffering individuals from stress and psychological dysfunction (Cohen & Wills, 1985). Individuals who receive more support are better able to cope with stress and this ultimately aids in psychological adjustment (Holahan, Moos, & Bonin, 1997). Further, increased levels of social support have been shown to play an etiological role in the development of psychological disorders such as depression (Roberts & Gotlib, 1997).

Second, self functioning plays a role in the receipt and perception of social support. It is true that personality characteristics may increase support opportunities in reality. For example, individuals who generally experience more positive affect tend to be engaged in more social interaction and thus have increased social support availability (Watson, Clark, McIntyre, & Hamaker, 1992). However, it is also true that individuals who are functioning less well in

themselves seem to perceive that they have less support available to them regardless of the reality of the situation. Gracia and Herrero (2004) found using Structural Equation Modeling that higher perceptions of social support within specific relationships were in part a function of personal variables including lower levels of stress and depression and higher levels of self-esteem. The suggestion therefore is that while lower levels of social support have a deleterious impact on self functioning, self functioning also has impacts on perceptions of social support. Gurung et al. (1997) also found that when an individual's personal characteristics were more negative (higher depression, anxiety, loneliness, lower self-esteem), this contributed significantly to both perceptions of less support in a stressful situation and lower levels of observed support in the stressful situation. For the current research it was predicted that women who were functioning less well in themselves (lower self-esteem, higher depression) would report less frequent and helpful partner support of their weight-loss attempts.

*Social support and attachment.* Social support and attachment style are intricately related, so much so that some researchers have suggested that perceived support is a consequence of the internal working models regarding the self and others developed in infancy (attachment style) (Sarason, Pierce, & Sarason, 1990; Sarason, Pierce, Shearin, Sarason, Waltz, & Poppe, 1991). In support of this notion, Moreira et al. (2003) found the link between lower levels of social support and higher levels of psychological distress was accounted for in large part by the contribution of attachment style.

Working models act as filters through which the actions of others are interpreted. Securely attached individuals would be more likely to interpret the actions of a romantic partner as supportive based on their understanding that others can be relied on and they are worthy of

support. Anxiously or avoidantly attached individuals are unlikely to expect support from their partner (Larose & Boivin, 1998) based on a history of relationships with others who have been unresponsive in times of need, and so may perceive less support from their partners. These theoretical notions have been supported by much research demonstrating an association between insecure attachment (both avoidant and anxious) and feelings of being less supported (Anders & Tucker, 2000; Blain, Thompson, & Whiffen, 1993; Collins & Feeney, 2004; Davis et al., 1998; Florian, Mikulincer, & Bucholtz, 1995). The effect of attachment style on support perception seems to be particularly pertinent when the support is somewhat ambiguous (Collins & Feeney, 2004). This makes attachment style of particular import in naturalistic settings where ambiguous support behaviour is likely to occur due to low motivation and a perhaps relative lack of the ability to provide effective support (Collins & Feeney, 2000; Feeney & Collins, 2003). For the current study it was expected that women who reported higher levels of insecure (anxious or avoidant) attachment would report less frequent and helpful partner support of their weight-loss attempts.

*Social support and relationship satisfaction.* As outlined earlier, social support is an important part of close romantic relationships (Pasch et al., 1997). Thus, it is not surprising that receiving more support in one's relationship is related to greater marital satisfaction both cross-sectionally (Cutrona & Suhr, 1994; Dehle et al., 2001) and longitudinally (Cobb, Davila, & Bradbury, 2001; Feeney & Collins, 2003). The importance of support in a happy relationship is emphasised further in that individuals who are more satisfied in their relationship are also more likely to provide support to their partner (Collins & Feeney, 2000). These authors concluded that

this is probably due to a greater sense of commitment to a satisfying relationships, motivating greater sensitivity and response to partners' needs.

However, as is often the case, the causal link between support level and relationship satisfaction appears to run both ways. That is, perceptions of support are affected by the quality of one's relationship (Gurung et al., 1997). Collins and Feeney (2000) found that perceptions of support within an intimate relationship were coloured by the individual's beliefs and expectations regarding the relationship and their satisfaction with the relationship. Individuals who were happier in their relationship perceived their partner to be more supportive and caring. Further, the effect of relationship satisfaction on support perceptions was independent of the actual level of support provided as rated by an independent observer. This highlights the importance of the relationship context in which support is provided. For the current research it was predicted that women who reported more frequent and helpful weight-loss support would report being in a more satisfying relationship, as would their male partners.

## **Weight-loss Support**

### ***Social Support and Physical Health***

In recent years there has been an upsurge in research on the effect of social support on both physical and mental health. Social support has long been connected to general health issues, with low levels of support repeatedly found to be associated with poor mental and physical health outcomes, and high levels of support associated with good long-term health outcomes (House et al., 1988). Further, a recent extensive review on social support in a health setting found social

support is generally an effective intervention for a range of problems including cancer, loneliness, birth preparation, substance abuse, and weight-loss (Hogan et al., 2002). This review found that both natural support provided by friends and family and support engineered in a professional setting are beneficial interventions in reducing poor health outcomes. Interventions were found to have a positive impact in an individual or group format, and whether peer or professionally-led. Interventions which included a social skills training component were found to be especially useful, highlighting the importance of supportive behaviours rather than just the experience of “support” per se.

### ***Weight-loss Support Conceptualisations***

Although in the social psychological literature support is typically conceptualized as being multi-faceted, and support type has been shown to be important, research into weight loss tends to conceptualize support in its broadest sense, as simply being in a supportive relationship with a significant other (House et al., 1988).

To my knowledge, only two studies have explored the role of different categories of social support in weight loss. First, Marcoux, Trenkner, and Rosenstock (1990) ran a pilot study to investigate the role of affective, instrumental, appraisal, and negative support in weight loss. They found appraisal support, defined as receiving reinforcement for behaviour, was most strongly associated with weight loss. Furthermore, they separated out sources of support and noted that neighbours and friends were the leading sources of appraisal weight-loss support, neighbours and spouses were the leading sources of affective weight-loss support, and co-workers and friends were the leading sources of instrumental weight-loss support, with ‘others’ being the top source of interference in weight-loss attempts.

Second, Rieder and Ruderman (2007) developed a questionnaire to assess the frequency and helpfulness of dieting support received from others generally. This questionnaire involved the assessment of the frequency of behavioural support provided, and the perceived helpfulness of each of these supportive behaviours. However, this study did not assess the behaviours that may interfere with an individual's weight-loss attempts. Rieder and Ruderman provided the first evaluation of weight loss support in terms of a social support taxonomy. In this taxonomy, emotional support was inclusive of expressions of concern for health and encouragement for dieting; instrumental support included the provision of material aid or specific services; informational support involved the supply of information that would aid weight management; and finally appraisal support involved the provision of feedback or compliments about the diet.

### ***Efficacy of Weight-Loss Support***

*Social support in weight-loss treatment programs.* As already noted, the effectiveness of social support has been investigated specifically in relation to weight-loss treatment programs. Family and friends may help by modelling and suggesting appropriate behaviours, and encouraging and reinforcing positive behaviours seen in the individual attempting weight-loss. Wing and Jeffery (1999) reported that participants who enrolled in a treatment program concurrently with friends had a lower drop-out rate and higher weight-loss maintenance rate, indicating that the utilisation of natural sources of social support is important in successful weight-loss. Indeed, research indicates that individuals who maintain weight-loss subsequent to participation in a behavioural program have a larger support network and are more likely to seek support when struggling with weight-related issues (Kayman, Bruvold, & Stern, 1990). However, familial support in weight loss may only be helpful if the dieter is from a family which is

emotionally close and caring (Barbarin & Tirado, 1985). Further, the involvement of a friends or family members in weight-loss treatment is most beneficial when the supporter loses weight themselves (Gorin, Phelan, Tate, Sherwood, Jeffery, & Wing, 2005).

*Support of individual weight-loss efforts.* Although much research has looked at the role of social support as a supplement to a behavioural weight loss program, very little research has focused on support systems for individuals attempting to lose weight without the aid of a weight-loss program. It seems plausible that social support may play an even more important role in the long-term maintenance of weight-loss for such individuals, who do not have the support of a program to fall back on. Consistent with this notion, Zimmerman and Connor (1989) found that the support of family and friends was helpful in making important behavioural changes to start a healthy lifestyle.

The current research investigated four subtypes of social support (informational, instrumental, emotional, appraisal), along with levels of support from partner, family, and friends. Although we had no specific predictions, this division of supporters allowed us to investigate whether types of support provided to dieters differed across relationship types.

### ***Weight-Loss Support from a Romantic Partner***

*Weight-loss treatment programs and spousal support.* Weight-loss treatment programs have also examined the role of spousal support specifically as a moderator of treatment outcomes, and found that such social support is one of the few variables related to long-term success of weight reduction (Brownell, 1984). One study showed the involvement of family, and particularly the spouse, in a behaviour modification program increased success rates throughout

treatment (Hart, Einav, Weingarten, & Stein, 1990). A meta-analysis by Black, Gleser, and Kooyers (1990) and a systematic review by McLean, Griffin, Toney and Hardeman (2003) both reported that including spouses in a weight-loss program increased the average weight loss during the period of treatment but not in the long-term. Moreover, providing the spouse with social support skills training further increased the long-term success of the weight-loss program, over and above the success due purely to the involvement of a spouse (Brownell, Heckerman, Westlake, Hayes, & Monti, 1978). Interestingly, Israel and Saccone (1979) found that a benefit of spousal involvement was only apparent when the more specific eating behaviours were targeted for support rather than 'weight loss'. However, not all studies have reported higher success rates through spousal involvement. For example, Brownell and Stunkard (1981) later reported null results using their original program. Perhaps because of these mixed results, enthusiasm for research in this area has died out, with little recent work.

*Individual weight-loss support and romantic partners.* Individuals who share a close relationship know one another's needs more thoroughly and therefore should be able to provide assistance more closely tailored to suit the individual's specific situation. Spouses share meals and often do the family shopping together, providing them with plenty of opportunities to be help or hinder their partner's diet. However, the role of a romantic partner in weight loss (not based around involvement in a treatment program) is relatively unexplored. Furthermore, Black and Threlfall (1989) note that dieting individuals with a slimmer partner lost more weight than those with overweight partners. This finding suggests that dyadic processes in close relationships may play a pivotal role in the success of dietary behaviour.

Although intimate partners have the opportunity to be helpful in supporting weight-loss attempts, it is equally possible for these partners to obstruct weight-loss attempts. The broad social support literature indicates the importance of skilled supportive behaviours in providing effective support that will be appreciated by an intimate partner (Cutrona & Suhr, 1994). In terms of specific weight-loss support, Parham (1993) outlines the difficulties of involving partners in weight-loss attempts, noting that dieting individuals often prefer not to involve their spouse. It appears that spouses who are disinterested or only marginally involved in weight-loss attempts may serve to impede or discourage the dieters' efforts. Indeed, dieting individuals appear to be more attuned to lack of support or negative behaviours from significant others than to helpful supportive behaviours. However, Parham is discussing here the role of spousal support in weight-loss treatment programs. In a natural environment it is possible that marginally interested spouses may still be more helpful than completely disinterested spouses.

For the current research it was predicted that women's perceptions of more frequent and helpful weight-loss support from their partners would be related to more frequent use of healthy dieting techniques. Furthermore, the longitudinal design of the current research allowed us to investigate the effect of partner support on subsequent weight-loss over a period of 18 weeks. It was predicted that more frequent and helpful support would be related to greater weight-loss over time. Predictions regarding the perception of weight-loss support frequency and helpfulness and how often the female dieter turns to unhealthy/extreme dieting techniques will be discussed later.

### ***Weight-Loss Support, Eating Disordered Attitudes and Unhealthy Dieting***

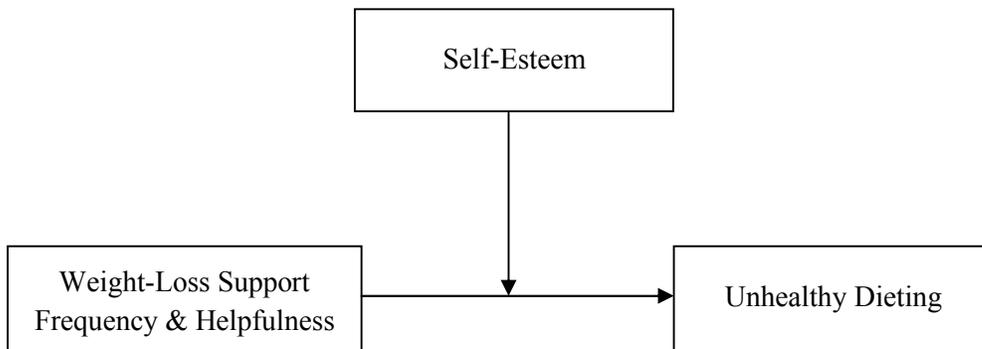
*Weight-loss support and eating disordered attitudes.* Low levels of general social support have been linked to the development of eating disorders. Bennett and Cooper (2001) found that

individuals with eating disorders had felt less supported generally in the year leading up to their disorder when compared with the perceived support in a year by a dieter. Lack of weight-loss support specifically may be a particularly poignant marker to dieting women that they are not being supported, resulting in an increase in eating disordered attitudes including higher body dissatisfaction and a greater pursuit of thinness. However, it is likely that the relationship between weight-loss support and eating disordered attitudes is bi-directional. Male partners of women who demonstrate dysfunctional attitudes towards their body and eating may be unwilling to support these hazardous attitudes, and as such withdraw support from dieting behaviours. For the current research it was predicted that women who reported less frequent and helpful weight-loss support would have higher levels of eating disordered attitudes.

*Weight-loss support and unhealthy dieting.* Unhealthy dieting techniques such as use of diet pills and fasting are more drastic strategies than the normative healthy dieting behaviours of eating less fatty foods and increasing exercise. It appears that women with an increased drive for thinness and body dissatisfaction may turn to unhealthy dieting techniques when healthy dieting techniques fail. Thus, the question arises of whether women will also turn to unhealthy dieting techniques when they are or feel unsupported by their partner in their weight-loss efforts? This may depend on the extent to which the woman experiences this lack of support as something that reflects her own failings.

Murray, Holmes, and Griffin (2000) have demonstrated that for women with low self-esteem a perception of lack of regard from their partner is indicative of their low self-worth and what they believe is their just deserts given their own weaknesses. For example, if their partner is in a negative mood, women with low self-esteem are more likely to feel that they are the target of

the bad mood and feel more rejected (Bellavia & Murray, 2003). These findings indicate that women with low self-esteem are more likely than women with high self-esteem to focus on their partner's negative feelings and behaviours and to attribute the cause of these feelings and behaviours to themselves. In terms of weight-loss support perceptions, this would mean that if women with low self-esteem feel unsupported by their partners, they are likely to attribute this to their own failings, which will motivate them to indulge in unhealthy dieting practices. In contrast, for those with high self-esteem, low levels of partner support are less likely to result in unhealthy dieting behaviour. These predictions translate into self-esteem playing moderating role as shown in Figure 3.



*Figure 3.* Model of the link between weight-loss support frequency and helpfulness and unhealthy dieting.

Thus, for the current study it was expected that women with lower self-esteem would report higher levels of unhealthy dieting when their partner reported less helping behaviour, or the women felt their partner was not providing frequent or helpful weight-loss support. However, for women with high self-esteem it was expected that receiving or perceiving less frequent and helpful weight-loss support would not be related to doing more unhealthy dieting.

## **Current Research**

Thus far we have seen that weight-loss efforts are an important issue in today's society (Irving & Neumark-Sztainer, 2002) and that social support has a role to play in health issues, including weight-loss (Hogan et al., 2002). However, weight-loss specific support for women has not been well investigated, particularly in terms of naturalistic diets. The current research investigated this area in 44 cohabiting couples in which the female was dieting in order to lose weight.

First, the intrapersonal and interpersonal context in which females' diets occur was investigated more thoroughly than the scattered research on this area to date. The current research aimed to provide a fuller picture of the context in which women's diets occur by examining the roles of depression, self-esteem, attachment style, and relationship satisfaction. A further strength of this study was that both healthy and disordered dieting techniques were assessed, allowing our predictions to attain good convergent/discriminant validity. That is, it is important to show that given variables (e.g., depression) are specifically linked to unhealthy dieting practices, rather than simply dieting behaviour in general.

Second, while the intrapersonal and interpersonal context of general social support in intimate relationships has been relatively well investigated, there is a paucity of research dealing with the specific support by romantic partners in women's everyday dieting attempts. The current research aimed to fill this gap in the literature by exploring the associations between the frequency and helpfulness of weight-loss support from a romantic partner and a number of psychological and relationship functioning variables.

Finally, this study included a longitudinal design, which enabled the long-term impact of the diet, support, and its context on weight-loss outcome to be assessed. Women were phoned at three six-week intervals following initial participation, giving a follow-up period of eighteen-weeks. At each call the progression of their weight-loss efforts was assessed by measuring their current weight and body satisfaction. Although the impact of spousal support has been considered in terms of weight-loss treatment programs, this novel research into the impact of partner support on naturalistic dieting efforts represents a further strength of this study.

Specific predictions have been outlined throughout the introduction and are summarised here:

### ***Summary of Predictions***

In summary, I predicted that:

#### *Dieting*

1. Women who reported lower self-esteem, higher levels of depression, and higher levels of attachment anxiety would report greater levels of unhealthy dieting but not healthy dieting.
2. Women who reported being less satisfied with their relationship would report greater levels of unhealthy dieting but not healthy dieting.
3. a) Women who reported higher levels of eating disordered attitudes and beliefs would report greater levels of unhealthy dieting but not healthy dieting.  
b) The positive link between higher eating disordered attitudes and beliefs and higher levels of unhealthy dieting would be stronger for women with low self-esteem than high self-esteem (see Figure 1).

4. The link between lower self or relationship functioning and higher levels of unhealthy dieting would be mediated by higher levels of eating disordered attitudes and beliefs (see Figure 2).

*Weight-loss Support Frequency and Helpfulness*

5. Women who had higher self-esteem, lower levels of depression, and a more secure attachment style would report receiving more frequent and helpful weight-loss support from their partner.
6. Women reported more frequent and helpful weight-loss support from their partner would report being in a more satisfying relationship and have partners who reported being in a more satisfying relationship.
7. Women who reported greater levels of healthy dieting would report more frequent and helpful weight-loss support from their partner.
8. More frequent and helpful weight-loss support would be related to higher levels of weight-loss over time.
9. Women who reported more eating disordered attitudes and beliefs would report less frequent and helpful weight-loss support from their partner.
10. More frequent and helpful weight-loss support would be related to lower levels of unhealthy dieting in women with low self-esteem but not in women with high self-esteem (see Figure 3).

## Method

### *Participants*

Participants at initial assessment comprised 44 heterosexual couples currently living together. All female participants had been dieting in order to lose weight for at least half of the previous month, on average dieting for 25 out of 30 days. The mean age of the female participants was 29.43 years ( $SD = 9.95$  years). The mean age of the male participants was 31.61 years ( $SD = 11.87$  years). The average relationship length was 78.06 months ( $SD = 99.00$  months). Fifteen couples were married and 29 unmarried. The female average BMI was 26.85 ( $SD = 4.51$ ), with 2% under weight (BMI < 20), 52% normal weight (BMI = 20-25), 23% overweight (BMI = 25-30), and 23% obese (BMI > 30). The male average BMI was 26.02 ( $SD = 3.93$ ).

Participants for follow-up calls comprised 37 of the 44 females that initially participated. Five women were unable to be contacted for follow-up calls, one did not wish to be called, and one couple had broken up.

### *Cross-Sectional Measures*

*Relationship satisfaction.* Relationship satisfaction was measured using the Fletcher, Simpson, and Thomas (2000) Perceived Relationship Quality Components Scale. This scale consists of 6 items: How satisfied are you with your relationship? How committed are you to your relationship? How close is your relationship? How intimate is your relationship? How much do you trust your partner? How passionate is your relationship? How much do you love your

partner? Each question is answered on a 7-point Likert scale anchored by 1 = *Not at all* and 7 = *Extremely*. Instructions were to rate the current partner and relationship on each item. All items were then averaged, with higher scores representing higher relationship satisfaction. This scale has been shown to be both reliable and valid (Fletcher et al., 2000).

*Attachment style.* Attachment orientation was assessed using the Adult Attachment Questionnaire (Simpson et al., 1996). The AAQ is a standardized and well-validated scale developed to measure attachment in romantic relationships in general. The AAQ involves 17 items, and produces scores for the two underlying attachment dimensions, avoidance (consisting of items from the secure and avoidant prototypes, which form opposite poles) and anxious/ambivalence (consisting of items from the anxious/ambivalent prototype as well as items tapping level of anxiety about abandonment or reciprocation of love). Items in both dimensions are worded in both positive and negative directions to control for response bias but are keyed so that higher scores indicate greater anxious/ambivalence and avoidance. Participants were instructed to rate each item in reference to their close romantic relationships in general and responded on a 7-point Likert scale with anchors of 1 = *Strongly Agree* and 7 = *Strongly Disagree*. On the avoidant attachment scale, the corrected item-total correlation for the item “I’m comfortable having others depend on me” was negative, thus this item was removed for all analyses.

*Self-esteem.* Self-esteem was measured using the commonly used 10-item (Rosenberg, 1965) self-esteem scale. This scale measures global feelings of self-worth (e.g., I feel that I am a person of worth, at least on an equal basis with others). Participants rated each item on a 7-point Likert scale with anchors of 1 = *Strongly Agree* and 7 = *Strongly Disagree*. Negative items were

reverse scored. All items within the scale were then averaged so that higher scores represent higher (more positive) self-esteem.

*Depression.* Depression was measured using the widely employed 21-item Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979). This scale measures a comprehensive range of the cognitive (e.g., suicidal ideation), affective (e.g., sadness), and behavioural (e.g., sleeping difficulties) symptoms of depression. For each item, participants were asked to circle one of four statements based on which statement best described how they had been feeling in the past week. Each statement carries a score from zero to three. Thus, the possible range of scores is 0-63 with high scores indicating severe depression.

*Healthy and unhealthy dieting behaviours.* Dieting Behaviour was assessed using the Weight Control Behaviours Scale (French et al., 1995). The WCBS is a 24-item checklist of various weight loss behaviours. It contains two subscales: Healthy Dieting and Unhealthy Dieting. The 11 items in the Healthy Dieting Subscale were reducing calories, increasing exercise, increasing fruit and vegetable intake, eliminating snacks, decreasing fat intake, eliminating sweets, reducing the amount of food consumed, changing the type of food eaten, eating less meat, eating less high-carbohydrate food, and eating low-calorie foods. The 8 items in the Unhealthy Dieting Subscale were fasting, skipping meals, increasing the number of cigarettes smoked, laxative use, diuretic use, appetite suppressant use, diet oil use, and vomiting<sup>1</sup>. Participants were asked to indicate how often in the last 12 months they had engaged in particular dieting behaviours for the purpose of losing weight. They were instructed that they should

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<sup>1</sup> The original factor analytic work on this scale (French et al., 1995) indicated that five of the items included in the original scale did not load on either of the two main factors. These items were not included in this study.

endorse behaviours they had engaged in with the intention of losing weight regardless of whether they had actually lost weight. Participants responded on 9-point Likert scales ranging from 1 = *Never* to 9 = *All the Time*. This scale has been initially reported as reliable and valid (French et al., 1995). On the Healthy Dieting scale, the corrected item-total correlation for the increasing exercise item was low, thus this item was removed for all analyses.

*Eating disordered attitudes and beliefs.* Psychological correlates of eating disorders were measured using a shortened version of the Eating Disorder Inventory 2 (EDI-2; Garner, 1991). This widely used self-report scale measures a range of behaviours and attitudes associated with Anorexia Nervosa and Bulimia Nervosa. The subscales used in this research were the eating and weight-related scales of Drive For Thinness (e.g. I am preoccupied with the desire to be thinner), Bulimia (e.g. I think about bingeing) and Body Dissatisfaction (e.g. I think that my thighs are too large). These scales primarily measure participants' attitudes and beliefs regarding their body and eating. Participants were instructed to respond to 23 statements on a 6-point Likert scale ranging from 1 = *Never* to 6 = *Always*.

*Weight-loss support frequency.* Levels of partner support were measured using the Weight Management Support Inventory (WMSI; Rieder & Ruderman, 2007) . The original WMSI was designed to ask about support from people in general. In this study, we framed it to ask about support from three different groups for the female participants: a) the partner, b) friends, and c) family. Another version of the WMSI was framed to ask the male partners how much support they provided the female (see Appendix B). Participants were instructed to rate how often the support behaviours had occurred over the past 4 weeks on a 7-point Likert scale, ranging from 1

= *Never* to 7 = *Daily*. Provisional evidence showed good reliability and validity (Rieder & Ruderman, 2007).

*Weight-loss support helpfulness.* Female participants were asked three open-ended questions: “What does your partner do that makes it easier for you to lose weight (e.g., easier for you to meet your food and/or exercise goals)?”, “What does your partner do that makes it harder for you to lose weight (e.g., harder for you to meet your food and/or exercise goals)?”, and “What would you ideally like your partner to do that would make it easier for you to lose weight (e.g., easier for you to meet your food and/or exercise goals)?”. Participants’ responses to these questions were then coded independently by two raters as to overall how helpful the participant appeared to find the support her partner was providing. The helpfulness rating was recorded on a 7 point scale, with 1 = *Extremely unhelpful*, 4 = *Neither helpful nor unhelpful*, and 7 = *Extremely helpful*. The first 10 responses were coded separately, then discussed and used as exemplars for further coding. The next 34 responses were coded separately by each coder. Inter-rater reliability was high ( $r = .83$ ). The coders met to discuss any issues that arose over uncertainty in the coding and ratings in which differences occurred across the two coders were resolved through discussion and a consensus reached.

*Weight status.* Participants’ weight status was assessed using Body Mass Index scores (BMI = weight/height<sup>2</sup>).

### ***Longitudinal Measures***

*Weight status.* Participant’s weight status was again measured using the Body Mass Index (BMI = weight/height<sup>2</sup>).

*Body Satisfaction.* Body satisfaction was measured using a single item scale: “Overall, how satisfied are you with your body?” Participants responded on a 7-point Likert scale ranging from 1 = *Extremely Dissatisfied* to 7 = *Extremely Satisfied*.

### ***Procedure***

*Female participant.* Female participants attended the laboratory to complete their questionnaires. Verbal instructions were given and consent was obtained. Participants were then given the materials as part of a larger set of questionnaires. Materials completed relevant to the present study were the relationship satisfaction, self-esteem, depression, attachment, body satisfaction, and dieting questionnaires, along with the open ended support helpfulness questions. Female participants also completed three versions of the weight-loss support frequency questionnaire, asking about dieting support from partner, friends, and family. A background information form was also completed, asking their age, relationship status, relationship length, ethnicity and occupation. Once the questionnaire was completed, the participant’s height and weight were taken. Measurements were taken without shoes or any bulky clothing or items. Upon completion of the study the participants were thanked and paid \$15.

Female participants were followed up six, twelve, and eighteen weeks after questionnaire completion. Follow-up calls were completed within three days either side of the exact call date. Participants were asked at time one to measure their weight on their regular scales without shoes or bulky clothing or items. At each follow-up call participants were asked to take their current weight in the same fashion using the same scales. At each call participants were also asked a

variety of questions pertaining to their relationship and diet. For the focus of this study the key question was regarding their current level of body satisfaction.

*Male participant.* When the female participant had completed her questionnaire, she was given a sealed envelope containing the male participant questionnaire to take home to her partner. The envelope included an information sheet, consent form, questionnaire packet, \$10 voucher, and prepaid envelope in which to return the questionnaire. The materials completed relevant to the present study were the relationship satisfaction questionnaire and weight-loss support frequency questionnaire which asked about the support they were providing for their partner. Male self-esteem, attachment style, and dieting levels were also measured and self-reports of their height and weight taken. However these variables will not be reported in detail here as when they were statistically controlled they did not change the focus of the results. The male participant was asked to complete his questionnaire at home, and as such was required to sign a consent form indicating he would complete the questionnaire on his own and not discuss responses with his partner. Upon completion of the questionnaire, the male participant posted his questionnaire back. Questionnaires were promptly returned with 96% compliance.

## Results

Results presented will focus on the female dieters – their self and relationship functioning, their diet, support for the diet, and the effectiveness of their diet. Results will be discussed in three sections. First, results pertaining primarily to self and relationship functioning will be discussed, particularly in relation to their association with healthy and unhealthy dieting. Included in this section will be a discussion of the relation between self and relationship functioning, dysfunctional eating and body attitudes, and unhealthy dieting practices. Second, results pertaining to support for the female’s diet will be discussed. Third, results pertaining to the effectiveness over time of the female’s diet will be discussed.

### **Self and Relationship Functioning: Testing the Role of Individual Differences**

#### ***Descriptive Results***

Table 1 displays means, standard deviations and reliabilities for the major variables (except weight-loss support variables, which are displayed and discussed later). All the scales demonstrated good reliability, except for the unhealthy dieting scale. The internal reliability for the unhealthy dieting scale was somewhat concerning. However, the rarity in a community sample of the eating disordered behaviours asked about in the unhealthy dieting scale make this result unsurprising. There was a significant trend for more overweight females (as measured by Body Mass Index (BMI)) to have more overweight male partners ( $r = .33, p < .05$ ). There was also a non-significant trend for male and female relationship satisfaction to be related ( $r = .27$ ).

Table 1  
*Means, Standard Deviations and Internal Reliabilities for Major Self and Relationship Functioning Variables*

Variable		<i>M</i>	<i>SD</i>	<i>IR</i>
Female	BMI	26.85	4.51	
	Relationship Satisfaction <sup>a</sup>	6.19	0.80	.87
	Self-Esteem <sup>a</sup>	5.15	1.04	.89
	Anxious Attachment <sup>a</sup>	3.18	1.24	.84
	Avoidant Attachment <sup>a</sup>	3.28	1.17	.81
	Healthy Dieting <sup>b</sup>	6.10	1.46	.79
	Unhealthy Dieting <sup>b</sup>	1.13	0.18	.49
	Depression <sup>c</sup>	.62	.41	.90
	Eating Disordered Attitudes & Beliefs <sup>d</sup>	3.70	.79	.91
Male	BMI	26.02	3.93	
	Relationship Satisfaction <sup>a</sup>	6.16	0.80	.86

*Note:* Internal Reliability (IR) was measured with Cronbach alphas. \* $p < .05$ . \*\* $p < .01$ .

<sup>a</sup> A 1 – 7 Likert scale was used. <sup>b</sup> A 1 – 9 Likert scale was used. <sup>c</sup> A 1 – 6 Likert scale was used. <sup>d</sup> A 0 – 3 Likert scale was used.

### ***Within-Individual correlations***

*Self and relationship functioning.* Within-participant correlations for major variables for women are shown in Table 2 (except weight-loss support correlations, which are discussed later). Within-participant correlations for self and relationship functioning were generally consistent with well-replicated prior research. Women with higher self-esteem reported higher relationship satisfaction. Higher relationship satisfaction and self-esteem were also associated with lower attachment anxiety and avoidance. Females who reported higher levels of depression also reported lower self-esteem and greater attachment anxiety.

Table 2  
*Within-Women Zero-Order Correlations Between Major Self and Relationship Functioning Variables*

	1	2	3	4	5	6	7	8
1 Relationship Satisfaction								
2 Self-esteem	.34*							
3 Anxious Attachment	-.35*	-.53**						
4 Avoidant Attachment	-.30*	-.35*	.27					
5 BMI	-.23	-.12	.21	.08				
6 Healthy Dieting	-.12	-.09	.29	.16	.19			
7 Unhealthy Dieting	-.14	-.51**	.29*	.11	.09	.04		
8 Eating Disordered Attitudes & Beliefs	-.32*	-.55**	.48**	.21	.28	.29	.54**	
9 Depression	-.25	-.67**	.40*	.29	.17	.14	.41**	.64**

Note: \* $p < .05$ . \*\* $p < .01$ .

*Dieting.* Correlations between healthy and unhealthy dieting levels and self and relationship functioning are also outlined in Table 2. As predicted, healthy dieting levels were not associated with self or relationship functioning. Also as predicted, and consistent with prior research, women who were engaging in more frequent unhealthy dieting had more negative views of the self (lower self-esteem and higher levels of depressive symptomatology). Against predictions, women who were more anxious in their attachment style did not engage in more unhealthy dieting. However, the association between anxious attachment style and level of unhealthy dieting approached significance ( $p = .06$ ). Also against predictions, women who were less satisfied with their relationship did not engage in more unhealthy dieting

*Eating disordered attitudes and beliefs.* Finally, correlations between eating disordered attitudes and beliefs and other self and relationship functioning variables are also outlined in Table 2. Consistent with previous research, women who reported more disordered eating attitudes and beliefs had lower self-esteem, were more depressed, had less satisfying relationships, and were more anxious in their relationships. Also as predicted, women with more disordered eating tendencies also engaged in higher levels of unhealthy dieting. The role of self-esteem in this link will be discussed in detail later.

### ***Across-Partner Correlations***

The current research focused on female self and relationship functioning. In terms of across-partner correlations, only the association between female functioning and male BMI and relationship satisfaction were considered. Consistent with past research, women who were more anxious in relationships had male partners who were less satisfied with the relationship ( $r = -.32$ ,  $p < .05$ ). Against predictions, males who were less satisfied with their relationship did not have female partners who were doing more unhealthy dieting. No other female self functioning variables were associated with partner relationship satisfaction. Interestingly, relationship satisfaction for men was higher when their partner was less overweight ( $r = -.31$ ,  $p < .05$ ), however relationship satisfaction for women was not related to their partner's weight. This supports the notion that attractiveness is more important to males than females in a romantic partner (Fletcher et al., 2004).

*Controlling for partner effects.* Regression analyses were used to test whether the within-female links between self and relationship functioning variables and 1) unhealthy dieting, 2)

healthy dieting, 3) eating disordered attitudes and beliefs were affected by the male partner levels of the same variable. For example, unhealthy dieting was regressed onto both male and female relationship satisfaction in order to determine if the link between female relationship satisfaction and unhealthy dieting was influenced by male relationship satisfaction. Results indicated that controlling for male levels of a self or relationship functioning variable did not change any of the significant correlations between the female variables. Moreover, there were also no significant links between the partner and the female dependent variables (when controlling for the relevant female independent variables).

***Self-Esteem as a Moderator***

As shown in Figure 1, it was hypothesized that the relation between eating disordered attitudes and beliefs and unhealthy dieting should be moderated by self-esteem. In other words, individuals who have a higher level of eating disordered attitudes and beliefs should report a higher level of unhealthy dieting, but this pattern should be much more pronounced for those who have lower self-esteem.

Table 3  
*Regression Coefficients For Testing Whether Self-Esteem Moderated the Link between Unhealthy Dieting and Eating Disordered Attitudes and Beliefs.*

Independent and Moderator Variables	Unhealthy Dieting $\beta$
Eating Disordered Attitudes & Beliefs	.37*
Self-Esteem	-.30 <sup>†</sup>
Interaction	-.31*

Note: <sup>†</sup>  $p < .10$ . \* $p < .05$ . \*\*  $p < .01$ .

To test these predictions, hierarchical regression analyses were performed with unhealthy dieting as the dependent variable. Unhealthy dieting was regressed onto the independent variable of eating disordered attitudes and beliefs, the moderator variable of self-esteem, and the interaction between these two variables. In order to generate meaningful interpretations, and to reduce the potential of multicollinearity between the interaction terms and their constituent parts, the independent and moderator variables were centred before being multiplied to give the interaction variable and then entered into the regression equation. Table 3 outlines the regression coefficients, demonstrating that higher eating disordered attitudes and beliefs and lower self-esteem are both significantly (marginally for self-esteem) and independently associated with a higher level of unhealthy dieting. Further, the relationship between eating disordered attitudes and beliefs and unhealthy dieting is significantly different for women with low compared with high self-esteem (the interaction term).

Figure 4 illustrates the interaction between self-esteem and eating disordered attitudes and beliefs as related to unhealthy dieting. Aiken and West (1991) outline a process to illustrate such interactions - individuals who score low (one standard deviation below the mean) or high (one standard deviation above the mean) on an independent variable are compared amongst individuals who score low or high on the moderating variable. Following the procedures outlined by Aiken and West (1991) each slope was then tested for significance. The slope shown in Figure 4 for the low self-esteem individuals was significant,  $\beta = .68$  ( $t = 3.67, p < .01$ ). However, the slope for the high self-esteem individuals was not significant,  $\beta = .11$  ( $t = .64$ ). Thus, as predicted, women with more disordered attitudes to eating and their bodies engaged in

significantly higher levels of unhealthy dieting if they had low self-esteem, but not if they had high self-esteem.

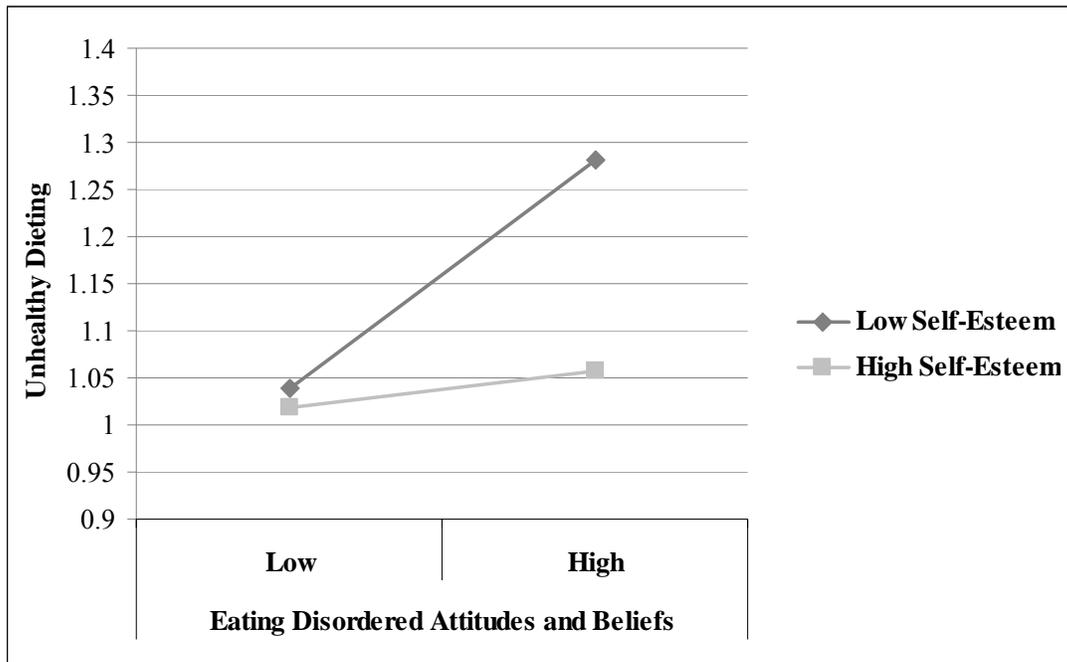


Figure 4: Interaction of eating disordered attitudes and beliefs and self-esteem as related to unhealthy dieting. Low scores are one standard deviation below the mean; high scores are one standard deviation above the mean.

*Alternative explanations.* Some alternative explanations should be considered. It is possible that the reason women with lower self-esteem and more dysfunctional eating and body attitudes turn to unhealthy dieting is that they are in fact more overweight, driving the low self-esteem, dysfunctional eating and body attitudes, and leading to unhealthy dieting practices. It is also possible that women in unsatisfying relationships have lower self-esteem and more dysfunctional attitudes towards their body and eating due to the pressure of relationship discord. This pressure may drive the woman to turn to unhealthy dieting. Finally, it is possible that the

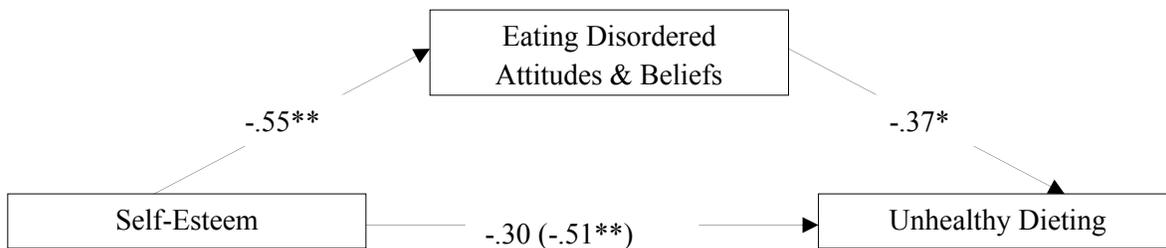
results are caused by healthy rather than unhealthy dieting. To test these alternative explanations, the prior analysis was recalculated sequentially controlling for BMI, relationship satisfaction, and frequency of healthy dieting. None of the results changed, indicating that none of these variables was causing the moderating affect of self-esteem in the original analysis.

### ***Eating Disordered Attitudes and Beliefs as a Mediator***

It was predicted that eating disordered attitudes and beliefs would mediate the link between self and relationship functioning variables and unhealthy dieting (see Figure 2). In order to demonstrate mediation, four conditions must be met (see Baron and Kenny (1986)). First, the self or relationship functioning variable must be significantly associated with unhealthy dieting. Second, the self or relationship functioning variable must be significantly associated with eating disordered attitudes and beliefs. Third, eating disordered attitudes and beliefs must be significantly associated with unhealthy dieting when controlling for the self or relationship functioning variable. Finally, the size of the path from the self or relationship functioning variable to unhealthy dieting should be significantly reduced when eating disordered attitudes and beliefs are controlled.

The mediation model was tested with the link between the self and relationship functioning variables and unhealthy dieting. As predicted, eating disordered attitudes and beliefs were found to (partially) mediate the links to unhealthy dieting for self-esteem, depression, and anxious attachment. However, as mentioned earlier, there was no significant association between relationship satisfaction and unhealthy dieting, so there was no need to test a mediational model for this variable. The specific results are described next.

*Self-esteem and unhealthy dieting.* Figure 5 outlines the results of the path analysis using multiple regression to test the mediation model, which was supported. Lower self-esteem predicted higher levels of eating disordered attitudes and beliefs, which in turn fed into higher levels of unhealthy dieting. Moreover, the indirect effect (equivalent to the drop in the direct path between self-esteem and unhealthy dieting when the mediating variable was controlled) was significant when tested with Sobel’s test ( $z = 2.46, p < .05$ ). This partial mediation model supports the hypothesis that women with lower self-esteem engage in more unhealthy dieting in part as a function of their higher levels of eating disordered attitudes and beliefs.



*Figure 5:* Model shows eating disordered attitudes and beliefs mediating the path between self-esteem and unhealthy dieting. Values are standardized regression co-efficients. The coefficient when eating disordered attitudes and beliefs is not controlled for is shown in parentheses. \*  $p < .05$ . \*\*  $p < .01$ .

*Depression and unhealthy dieting.* Figure 6 again outlines the results of the path analysis using multiple regression, and, again, supports the model. Higher levels of depressive symptomatology predicted higher levels of eating disordered attitudes and beliefs, which in turn fed into higher levels of unhealthy dieting. Moreover, the indirect effect of depression on unhealthy dieting was significant when tested with Sobel’s test ( $z = 2.48, p < .05$ ). This partial

mediation model supports the hypothesis that more depressed women engage in more unhealthy dieting in part as a function of higher levels of eating disordered attitudes and beliefs.

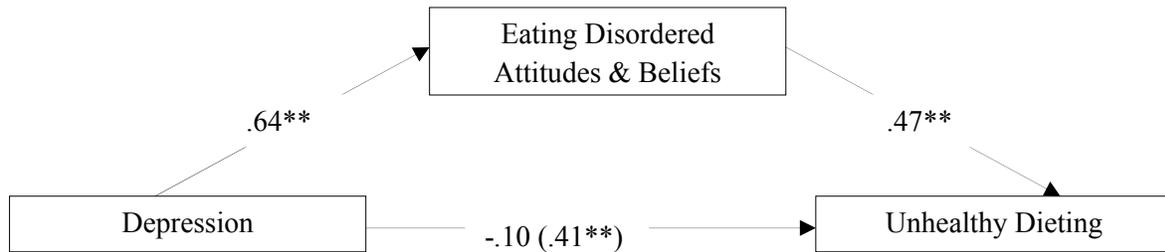


Figure 6. Model shows eating disordered attitudes and beliefs mediating the path between depression and unhealthy dieting. Values are standardized regression co-efficients. The coefficient when eating disordered attitudes and beliefs is not controlled for is shown in parentheses.

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

*Anxious attachment and unhealthy dieting.* Finally, Figure 7 outlines the supported mediational model between anxious attachment and unhealthy dieting. It demonstrates that higher levels of anxious attachment predicted higher levels of eating disordered attitudes and beliefs, which in turn fed into higher levels of unhealthy dieting. Moreover, the indirect effect of depression on unhealthy dieting was significant when tested with Sobel's test ( $z = 2.12$ ,  $p < .05$ ), even though the direct path (.29) was only marginally significant. This partial mediation model supports the hypothesis that women who are more anxious in their attachment style tend to do more unhealthy dieting in large part due to higher levels of eating disordered attitudes and beliefs.

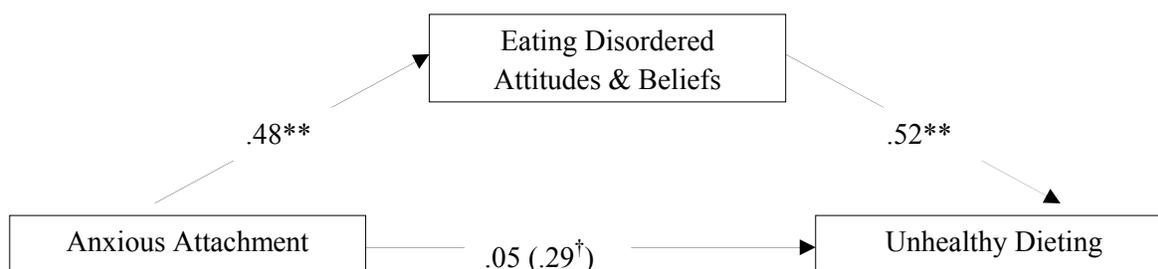


Figure 7. Model shows eating disordered attitudes and beliefs mediating the path between anxious attachment and unhealthy dieting. Values are standardized regression co-efficients. The coefficient when eating disordered attitudes and beliefs is not controlled for is shown in parentheses.

†  $p < .10$  \*  $p < .05$  \*\*  $p < .01$ .

*Alternative explanations.* It is again possible that being more overweight, being in a less satisfying relationship, or dieting in a healthier fashion, could be hidden third variables and producing the effects found. However, when the mediation models were recalculated controlling sequentially for BMI, relationship satisfaction, and healthy dieting, none of the direct or indirect paths changed in significance level, and the significant drops in the direct path were maintained. These analyses lend further support to the hypothesis that the psychological variables of self-esteem, depression, and anxious attachment exert an effect on eating disordered attitudes and beliefs, which in turn lead to higher levels of unhealthy dieting.

## Support for Dieting

### *Descriptive Results*

Table 4 displays means, standard deviations and reliabilities for the WMSI. All subscales demonstrated good reliability, ranging from 0.60 to 0.93.

Table 4  
*Weight-Loss Support Frequency Across Support Category and Relationship Type*

Support Category	Female Report of Support Frequency									Male Partner Report of Support Frequency		
	Partner			Friends			Family			Mean	SD	IR
	Mean	SD	IR	Mean	SD	IR	Mean	SD	IR			
<b>Emotional</b>	2.54	1.09	0.70	2.26	1.13	0.80	2.57	1.41	0.83	2.68	1.28	0.78
<b>Instrumental</b>	2.86	1.42	0.76	2.53	1.13	0.69	2.45	1.11	0.69	2.81	1.05	0.57
<b>Informational</b>	1.64	0.77	0.74	2.23	1.11	0.86	2.22	1.34	0.91	1.78	0.96	0.78
<b>Appraisal</b>	2.40	0.92	0.60	2.62	1.20	0.86	2.46	1.12	0.80	2.78	1.20	0.76
<b>Total</b>	2.35	0.74	0.82	2.41	0.97	0.92	2.42	1.07	0.93	2.50	0.84	0.86

*Note:* Internal Reliability (IR) was measured with Cronbach alphas. Female participants reported frequency of support received from partner, friends, and family. Male participants reported frequency of support provided to female partner.

*Agreement across partners regarding weight-loss support frequency.* Female and male reports of how frequently the male provided weight-loss-related support to the female were highly correlated ( $r = .54, p < .01$ ). This agreement suggests that these perceptions were closely tied to relationship reality. Moreover, a paired t-test showed that there was not a significant mean difference between females' reports of the frequency of males' support and males' reports. That is, no overall bias existed between the male and female reports of support frequency. This finding also suggests a degree of reality tracking between partners.

***Support Category and Support Source.***

A 4 (support category) x 3 (relationship type) Multivariate Analysis of Variance, with both factors as repeated measures, was used to look at the frequency of support across the four

support types (emotional, instrumental, informational, appraisal) and across the different relationships in which frequency of support was assessed (partner, friends, family). This analysis revealed a main effect for support type (Wilks' Lambda = .56,  $F(3,37) = 9.72$ ,  $p < .01$ ). However, this main effect was qualified by a significant interaction between support category and relationship type (Wilks' Lambda = .60,  $F(6, 34) = 3.84$ ,  $p < .01$ ). No main effect existed for relationship type (Wilks' Lambda = 1.00,  $F(2,38) = .081$ , *ns*).

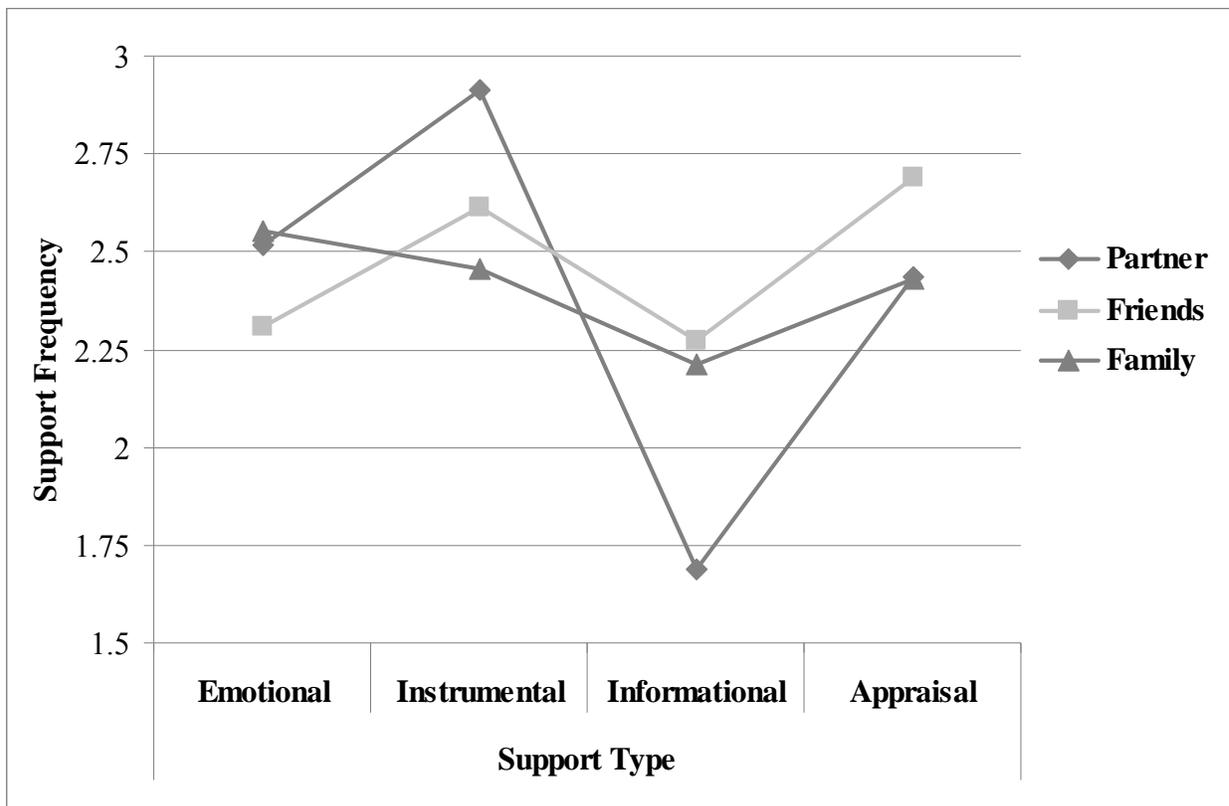


Figure 8. Female report of frequency of weight-loss support received from partner, friends, and family, across the four support category subtypes: emotional, instrumental, informational, and appraisal support. Frequency levels range from 1 = never to 7 = daily.

The significant interaction between support category and relationship type is pictured in Figure 8. This graph reveals the differences in frequency of different weight-loss support types

offered in an intimate relationship. Specifically, it appears that men offering support to their dieting partner tended to provide frequent instrumental support, average amounts of emotional and appraisal support, and infrequent informational support. Furthermore, the graph reveals that the frequency of informational support provided by partners was relatively much less than provided by friends and family, and the frequency of instrumental support provided by partners was relatively higher than provided by friends and family. Subsequent simple effects analysis revealed a significant effect of relationship type on informational support,  $F(2,38) = .4.61, p < .05$ . However, there was not a significant effect of relationship type on any other support types. This suggests that the interaction depicted in the graph is driven primarily by the lower levels of informational support provided by male intimate partners in comparison with family and friends

### ***Weight Management Support Frequency and Helpfulness Correlations***

*Correlation between weight-loss support frequency and helpfulness.* Women's reports of the frequency of weight-loss support provided by their partners, and the extent to which they found their partners helpful in weight-loss attempts were highly correlated ( $r = .50, p < .01$ ).

*Weight-loss support and self functioning.* Against predictions, no significant within-participant or across-partner associations were found between female self functioning (self-esteem, depression, attachment style) and male or female reports of how frequently males provided support to their female partners<sup>2</sup> (see Table 5).

Mixed results were found regarding the prediction that women who experienced lower levels of self functioning would report their partners were less helpful in providing weight-loss

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<sup>2</sup> Female BMI was consistently controlled for in subsequent analyses. Any analysis in which controlling for BMI affected significance levels are noted.

related support. Against predictions, women's perception of their partners as providing less helpful weight-loss support was not related to being more depressed or having lower self-esteem. When the relatively more objective report of support frequency was controlled for there was still no relationship between the subjective perception of support helpfulness and self functioning<sup>3</sup>. Thus, it appears that perceptions of how helpful romantic partners are in weight-loss attempts are influenced very little by self functioning, at least in a straightforward way (but see the later moderating results).

*Weight-loss support and relationship functioning.* As predicted, women with higher levels of attachment anxiety perceived their partner as less helpful in their weight loss attempts. This association held up when the frequency of support-behaviours was controlled for, indicating that women with a more anxious attachment style perceived the support they received as less helpful, regardless of the frequency of support received.

Against predictions, there was no significant associations between male or female report of support frequency or helpfulness and male or female relationship satisfaction (see Table 5). However, non-significant trends in the predicted directions existed for females who reported more frequent and helpful support to be more satisfied with their relationship and have male partners who were more satisfied.

*Weight-loss support and weight status.* Non-significant trends existed for women who were more overweight to report that their partners were providing less frequent and less helpful weight-loss support. However, their male partners did not report this lack of support, suggesting a

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<sup>3</sup> Female report of support frequency was consistently controlled for in subsequent analyses involving support frequency.

possible role for weight status in influencing female interpretations of the support received. Interestingly, a significant trend existed for female dieters who had more overweight partners to report that their partners were providing less frequent weight-loss support. Consistently, a non-significant trend also existed for women to perceive that more overweight partners were providing less helpful weight-loss support.

Table 5  
*Correlations Between Weight-Loss Support Frequency and Helpfulness and All Other Major Variables*

		Support Frequency		Support Helpfulness
		Female	Male	
Female	BMI	-.22	-.06	-.20
	Relationship Satisfaction	.22	-.11	.23
	Self-Esteem	-.08	-.22	.10
	Anxious Attachment	-.14	-.10	-.42**
	Avoidant Attachment	.12	.10	-.08
	Depression	-.02	0.19	-.21
	Healthy Dieting	.32*	.20	-.01
	Unhealthy Dieting	-.10	.07	-.15
	Eating Disordered Attitudes & Beliefs	-.13	.11	-.37*
Male	BMI	-.33*	-.19	-.25
	Relationship Satisfaction	.21	.15	.01

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

*Weight-loss support and dieting behaviour.* As expected, females who indicated higher levels of healthy dieting (but not unhealthy dieting), rated their partners as providing more frequent weight-loss related support (see Table 5). However, against predictions, women who found their partner more helpful in their weight-loss efforts were not engaging in more healthy dieting. The relationship between weight-loss support and unhealthy dieting will be discussed in moderation analyses later.

*Weight-loss support and eating disordered attitudes and beliefs.* Against predictions, the frequency of weight-loss support was not associated with levels of eating disordered attitudes and beliefs (see Table 5). However, as predicted women who reported a higher level of eating disordered attitudes and beliefs reported their partners were less helpful in supporting their weight-loss efforts. This suggests that level of weight-loss support is related in some way to how dysfunctional were the women's attitudes towards their bodies and eating.

***Self-Esteem as a Moderator***

Table 6

*Regression Coefficients For Testing Whether Self-Esteem Moderated the Link between Unhealthy Dieting and Weight-loss Support Frequency or Weight-loss Support Helpfulness.*

Analysis	Independent and Moderator Variables	Unhealthy Dieting
		$\beta$
1	Female Report of Weight-loss Support Frequency	-.14
	Self-Esteem	-.52**
	Interaction	.29*
2	Female Perception of Weight-loss Support Helpfulness	-.10
	Self-Esteem	-.50**
	Interaction	.32*
3	Male Report of Weight-loss Support Frequency	-.05
	Self-Esteem	-.52**
	Interaction	.05

*Note:* Main effects have been calculated without the interaction. Regression coefficients are standardized  $\beta$  weights for the centred variables. \* $p < .05$ . \*\* $p < .01$ .

*Does self-esteem moderate the link between weight-loss support frequency and unhealthy dieting?* As shown in Figure 3, it was hypothesized that the relation between weight-loss support frequency or helpfulness and unhealthy dieting should be moderated by self-esteem. Specifically,

it was predicted that women with low self-esteem should be more sensitive to the effects of partner support, whereas women with high self-esteem would be relatively impervious to their partner's actions.

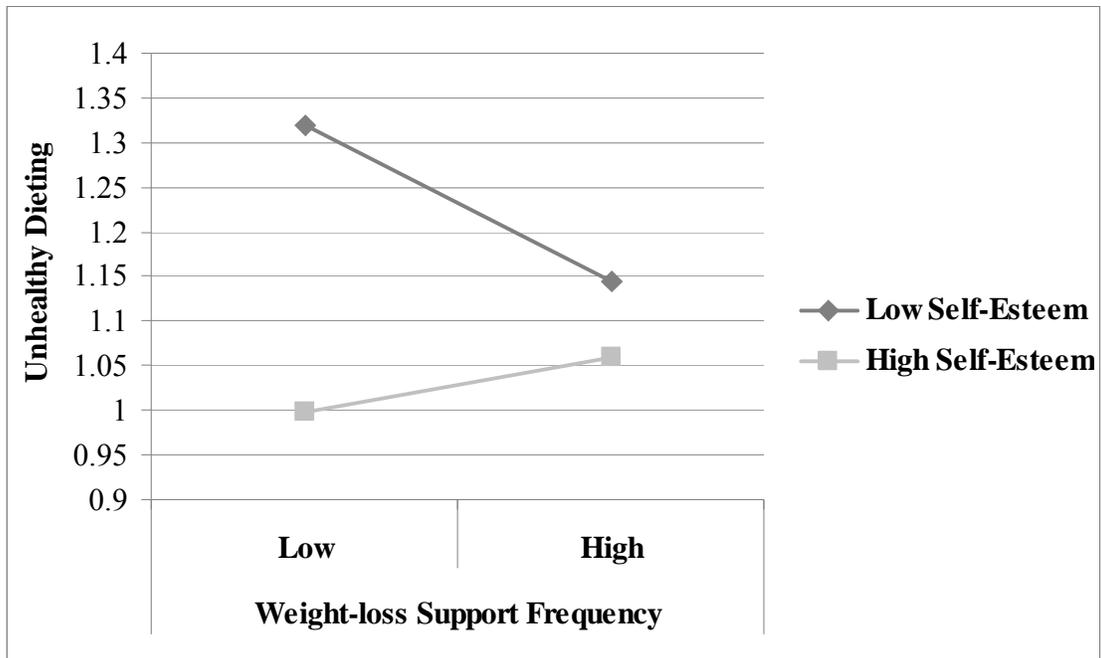


Figure 9. Interaction of female report of weight-loss support frequency and self-esteem as related to unhealthy dieting. Low scores are one standard deviation below the mean; high scores are one standard deviation above the mean.

These predictions were tested using the process outlined previously. The results in Table 6 show that lower self-esteem was associated with higher levels of unhealthy dieting, independently of weight-loss support frequency or helpfulness. Further, there was a significant interaction between self-esteem and female report of both weight-loss support frequency (illustrated in Figure 9) and helpfulness (illustrated in Figure 10). Following the procedures outlined by Aiken and West (1991) the slopes depicted in these graphs were then tested for

significance. In Figure 9 regarding levels of weight-loss support frequency, the slope for the low self-esteem individuals was significant,  $\beta = -.49$  ( $t = 2.40$ ,  $p < .05$ ) while the slope for high self-esteem individuals was not significant,  $\beta = .17$  ( $t = .91$ ). Again, in Figure 10 regarding weight-loss support helpfulness, the slope low self-esteem individuals was significant,  $\beta = -.60$  ( $t = 2.41$ ,  $p < .05$ ) while the slope for high self-esteem individuals was not significant,  $\beta = .21$  ( $t = 1.14$ ). Thus, as predicted, for women with high self-esteem, the perception of more frequent and helpful partner support was not significantly associated with level of unhealthy dieting. However, women with low self-esteem who perceived their partners were more supportive of their weight-loss efforts engaged in significantly less unhealthy dieting. Against predictions, there was not a significant interaction between self-esteem and male report of weight-loss support frequency. However, these results generally support the hypothesis proposed that women with low self-esteem are more sensitive than women with high self-esteem to the support they are receiving from their partner and adjust their behaviour based on perceptions of partner affection.

Some alternative explanations should be considered. It is possible that the impact of self-esteem on unhealthy dieting could be driven by women with lower self-esteem being more overweight or less satisfied in their relationships. It is also possible that women with high self-esteem turn to healthy rather than unhealthy dieting when they feel unsupported. To test these alternative explanations, the prior analyses were recalculated sequentially controlling for BMI, relationship satisfaction, and frequency of healthy dieting. None of the results changed, indicating that none of these variables was causing the moderating effect of self-esteem in the original analyses.

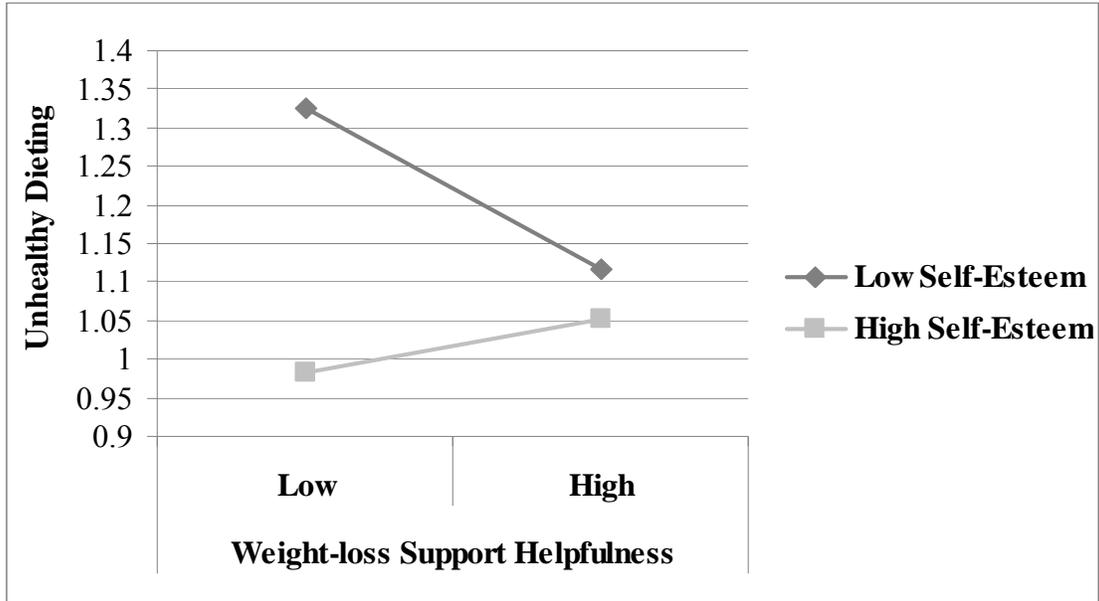


Figure 10. Interaction of female perception of weight-loss support helpfulness and self-esteem as related to unhealthy dieting. Low scores are one standard deviation below the mean; high scores are one standard deviation above the mean.

*Additional moderation analyses.* Although no predictions were made, a number of additional multiple regression analyses were run to test for moderating effects of any other self or relationship functioning variables (relationship satisfaction, anxious and avoidant attachment, depression) on the links between healthy or unhealthy dieting and eating disordered attitudes and beliefs, weight-loss support frequency, or weight-loss support helpfulness. No significant moderation models were found with the exception of anxious attachment moderating the link between weight-loss support frequency and healthy dieting (standardized  $\beta = -.33, p < .05$ ). As no similar results were found this result will not be focused on, but is reported in full in Appendix C.

## Longitudinal Analyses

### *Descriptive Statistics*

Female participants' weight and body satisfaction were measured at three subsequent 6-week intervals giving a follow-up period of 18 weeks. Participants were phoned to gather this information and 37 of the 44 participants completed all three follow-up calls. Participants were reminded at each call to take their weight on the same scales and without shoes or bulky clothing.

Descriptive statistics are displayed in Table 7. One-way, repeated ANOVA's revealed a non-significant trend for weight changes over time, whereas body satisfaction steadily, and significantly, improved over the 18 week period,  $F(3, 102) = 3.13, p < .05$ .

Table 7  
*Female Participants' Weight and Body Satisfaction Over Time.*

		Weight		Body Satisfaction	
		M	SD	M	SD
Time	Cross-sectional	71.02	13.50	3.27	1.60
Frame	6 weeks	70.41	13.64	3.67	1.43
	12 weeks	69.41	13.79	3.75	1.52
	18 weeks	69.57	14.65	3.85	1.44

*Note:* Female participants were asked to measure their weight on the same scales at all four time points to provide a consistent measure. Weight is reported in kilograms. Body satisfaction was measured with a single item 7-point Likert scale: 1 = extremely dissatisfied. 4 = neither satisfied nor dissatisfied. 7 = extremely satisfied.

### *Weight-Loss Effectiveness Over Time*

*Cross-lagged regressions.* To assess whether any of the individual-difference or relationship variables predicted change over time in either weight loss or body satisfaction, the standard multiple regression approach was used (Cohen & Cohen, 1983). For example, body satisfaction at time 4 (the final measurement) was regressed on both body satisfaction at time 1

and one predictor variable (relationship satisfaction, self-esteem, perceived support, etc.). None of the analyses produced significant regression coefficients for the predictor variables, suggesting that none of these independent variables predicted change over time in weight or body satisfaction.

*Growth curve analysis.* A different and more subtle approach to assessing change over time is the use of growth curve analysis using Structural Equation Modeling. Kenny, Kashy, and Cook (2006) specifically recommend this approach when the time intervals are evenly spaced and not too numerous, as in the current study. This was done using the EQS program (Bentler, 1995), and following the standard approach (see Kenny et al. (2006)). In this approach, the four measures over time (observed variables) are treated as indicator variables for two latent variables representing the intercept and change over time. Thus, the paths for the intercept were all set to 1, and the growth paths were set to 0, 1, 2 and 3. Before variables predicting change over time can be introduced into models, it is necessary to establish that rate of change significantly varies across individuals. Unfortunately, this proved not to be the case for either body weight or body satisfaction - the variances of the rate of change latent variable were not significant ( $z$ 's < 1.0). Thus, the analyses stopped at that point.

Another possibility is that the changes over time are not linear, but rather cubic. It seems plausible, for example, that those with low self-esteem may produce more marked or chaotic changes over time in body satisfaction and weight, whereas those with higher self-esteem are more stable and linear over time. To test this idea, we ran the growth curve analyses again, and tested for cubic effects by setting the rate of change paths as 0, 1, 8, and 27 (see Kenny et al.,

2006). However, once again, the variances of the rate of change latent variables were not significant for either body satisfaction or weight ( $z$ 's < 1.0).

## Discussion

The results of the current research demonstrate that there is an intricate relationship between healthy and unhealthy dieting, dieting support, and the self and relational context in which the dieting and its support occurs. Mixed support was found for hypotheses. However, as predicted, a) higher levels of unhealthy dieting were significantly related to more negative views of the self (e.g., lower self-esteem), and b) lower perceived levels of support from the partner were significantly related to higher levels of eating-disordered attitudes, anxious attachment, and lower relationship satisfaction. Moreover, the testing of more complex causal models showed that self-esteem played a pivotal role. First, the impact of self-esteem on unhealthy dieting was mediated by more disordered attitudes to eating. Second, those with low-self-esteem were much less likely to diet in an unhealthy fashion with more frequent and positive partner support, whereas high self-esteem women were not influenced by the support offered by their partners. These findings did not apply to the frequency of healthy dieting, with the important exception that more frequent partner support encouraged healthier dieting.

These results have important implications that will be discussed next. First, theoretical implications of the results pertaining to the practice of dieting (healthy and unhealthy) are considered, and then results pertaining to dieting support. Second, the practical implications of the findings are discussed. Finally, strengths and limitations of the current research and areas for further research are discussed.

## **Dieting**

### ***Healthy and Unhealthy Dieting: The Role of Individual Differences***

*Self functioning.* As expected, healthy dieting was not related to self functioning. This is not surprising given that periodic attempts at weight-loss are common and may be considered a normal part of life for many women (Polivy & Herman, 1987).

The use of unhealthy dieting techniques is another story. As expected, women who were using more unhealthy dieting techniques were more depressed and had lower self-esteem. That is, while healthy dieting behaviours appear to be part of normal life, unhealthy dieting behaviours seem to have a more pathological nature and are related to more unhealthy self functioning (regardless of the woman's actual weight status). The emphasis on being thin for women in contemporary western culture makes the failure of most diets to bring about weight change (Presnell et al., 2008) incredibly frustrating, and not surprisingly dieting failure causes depression (Koenig & Wasserman, 1995). However, research has also indicated that psychological functioning impacts on dieting (Koenig & Wasserman, 1995). It is likely that women who are in a more vulnerable psychological state have less mental energy to consider more healthy weight-loss strategies and, given their loss of self respect, may be less likely to view harmful dieting behaviours as off limits. Given the important role of physical attractiveness in women's evaluations of their own value (Grover et al., 2003) it is also likely that women who are feeling anxious or depressed may try riskier and more problematic techniques to lose weight in order to increase their feelings of self-worth.

In a consistent vein, although not quite significant, there was a trend for women who were more anxious in their attachment style to indulge in unhealthy dieting. Women who are more

anxious in their attachment style doubt that others will care for them due to an internal emphasis on their own failings. As such, it makes sense that these women engage in higher levels of unhealthy dieting, due again to their negative feelings about themselves and related negative feelings about their body (Elgin & Pritchard, 2006; Huntsinger & Luecken, 2004). As predicted, no other associations were found between attachment style and healthy or unhealthy dieting level. While women who are more avoidantly attached also doubt and distrust others, they tend to have quite high levels of self-esteem (Brennan & Morris, 1997). The lack of an association between avoidant attachment style and unhealthy dieting level highlights the role of self-doubt in women turning to disordered dieting strategies.

This study further implicates the important role that self-esteem plays in the turn towards harmful patterns of eating behaviours. As predicted, women who had more disordered attitudes toward eating and their bodies were more likely to be using disordered dieting techniques. However, also as predicted, women with both low self-esteem and disordered attitudes toward eating and their body were significantly more likely to allow these attitudes to translate into more frequent patterns of disordered dieting. This finding is in line with prior research which has shown that low self-esteem increases the positive link between eating disorder risk factors and eating pathology (Twamley & Davis, 1999; Vohs et al., 1999).

Why are women with low self-esteem at increased risk of turning to pathological eating behaviours? One explanation is that women with low self-esteem are likely to presume a negative outcome in attempting to reach their goals and focus on their weaknesses after experiencing failure (Dodgson & Wood, 1998). Women who believe that it is of utmost importance to be thin, and concurrently feel unhappy with their bodies are likely to feel a sense of failure. Women

focused on their inabilities may be less likely to believe they can reach their weight-loss goal by continuing to use healthy dieting techniques and so may turn to risky and disordered dieting techniques. An alternative explanation is that women with low self-esteem have a global feeling of low self-worth. As such, dysfunctional attitudes about eating and their bodies may go unchecked, because they are congruent with their general understanding of their worth. If women with high self-esteem however think their bodies are not good enough or they lose control of their eating, they are more likely to question what they are doing and they have the mental resources to control their behaviours more effectively.

*Relationship satisfaction.* As predicted, given the common use of healthy dieting techniques in weight-loss efforts, relationship satisfaction was not related to healthy dieting levels. However, against predictions, evidence was not found that women in less satisfying relationships (self and partner report) were doing more unhealthy dieting. These results suggest that relationship quality is not related to unhealthy dieting levels. However, there are good theoretical grounds and prior empirical evidence that would suggest otherwise. For example, Markey et al. (2001) found that women who reported being less satisfied in their relationship were doing more unhealthy dieting and Boyes et al. (2007) found that women were doing more unhealthy dieting when their male partners were less satisfied with the relationship. In addition, physical attractiveness is a key area for women in attracting and retaining a mate (Fletcher et al., 2004) and thinness is often equated with attractiveness in our culture (Furnham et al., 1998). Thus, theoretically it would seem that women who are in less satisfying relationships should strive harder in their weight-loss efforts.

Why, then, did I find a pattern of null results in the current study? Markey et al. (2001) used a sample of married couples, while the current study used a sample of couples who were living together but only 34% were married. Perhaps in marriages, the relationship context becomes more important over time and motivates women to use unhealthy dieting techniques. The sample size was also limited in the current study, thus there may not have been enough power to replicate the prior findings. Finally, it is possible that our sample of women, who were not generally over-weight, were striving to increase their attractiveness to their partner through other means including using makeup, programs of exercise, and so forth. Clearly, this area requires more research.

### ***The Pivotal Role of Eating Disordered Attitudes.***

Dysfunctional attitudes towards one's body and eating appear to play a pivotal role in the use of unhealthy dieting techniques for weight loss. As hypothesised in a mediational model, lower levels of self functioning (higher depression, lower self-esteem, higher attachment anxiety) predicted higher levels of dysfunctional attitudes towards body image and eating, which in turn predicted higher levels of unhealthy dieting (see Figure 1). This suggests that self-esteem does not cause unhealthy dieting directly but through the way in which self-esteem produces changes in attitudes towards body image and eating. Women turn to the use of such negative dieting behaviours to the extent that they have developed disordered eating attitudes such as a strong drive to be thin, dissatisfaction with their bodies, and a loss of control over their eating behavior.

As discussed earlier, the psychological variables related to unhealthy dieting all involve a weak sense of self-worth, which is a risk factor for the development of body dissatisfaction and

eating disordered attitudes (O'Dea & Abraham, 2000). Women with low self-worth have a broad feeling that they are not good enough, which given the centrality of perceptions of attractiveness in Western cultures, and their key role in mate selection and retention contexts, may turn into obsessional thoughts about the thin ideal, and subsequent extreme dieting behaviours.

While we tested and found support for a causal model that ran from self functioning through to unhealthy dieting, cross-sectional regression analyses are unable to rule out the possibility of bi-directional causality. Indeed, a bi-directional model is theoretically plausible and past research indicates that it is likely. The use of unhealthy dieting techniques likely serves to further increase focus on the body and eating patterns, exacerbating the drive for thinness and body dissatisfaction, and feeding back into lower levels of self-esteem (Tiggemann, 2005).

### ***Summary***

Weight-loss attempts in women may follow two very different paths. In one path, women utilise healthy dieting techniques with no apparent detriment in self or relationship functioning. The other much more destructive path involves psychologically vulnerable woman, who are plagued by self-doubt, turning to disordered dieting as they begin to feel their bodies are not good enough and their eating is out of her control.

## **Dieting Support**

### ***Partner Support of Dieting: The Role of Individual Differences***

*Self functioning.* Against predictions, women who were more depressed and had lower self-esteem did not report they were receiving less frequent or helpful weight-loss support from their

partners. This finding was surprising given past research indicating a positive relationship between psychological functioning and perceptions of support (Gracia & Herrero, 2004; Gurung et al., 1997). The reason for these null results is not clear. However, one explanation is that the frequency of support behaviours in this study were assessed relatively objectively. Past research suggesting a role of psychological functioning in support perceptions has assessed support more broadly with questions such as “Could you freely express and share your emotions with this person?” and “If you were sick or needed to be taken to the doctor, would this person be of any help?” (Gracia & Herrero, 2004). The measurement of support in the current study was related only to weight-loss and the questions were very specific items such as “My partner splits a dessert or meal with me to help me to reduce the amount I eat” thus perhaps limiting the tendency for these reports to be affected by self-esteem or depression. Indeed, the current research indicated that romantic partners were able to accurately perceive the amount of support they were providing and receiving, demonstrated by high levels of agreement with one another ( $r = .54$ ).

Consistent with this explanation, research has shown that while perceptions of feeling supported are related to better psychological adjustment, conscious receipt of actual supportive behaviours is not related to better adjustment (Bolger, Zuckerman, & Kessler, 2000). Perhaps women who perceive they receive more support may also infer they are less able to cope on their own. Dieting efforts may well be motivated by a desire to increase inherent self or mate value through weight-loss – thus, the obvious and salient help of their partner may serve to induce feelings of incompetence or even suggest that their partners are clearly unhappy with their own appearance. Consistent with this explanation, Overall, Fletcher, and Simpson (2006) reported that more strenuous attempts to change or regulate partners’ attractiveness was associated with higher

levels of relationship unhappiness both cross-sectionally and longitudinally. Support for dieting seems to be a double-edged sword.

*Attachment style.* As predicted, women who were anxious in their attachment style reported that their partners were less helpful in their weight-loss efforts (although they did not report that their partners were providing less frequent weight-loss support). Perceptions of how supportive partners were are related by definition to attachment style. Women who are anxious in their attachment style have working models which say that others cannot be depended upon for support because, even though they crave such support, they are not worthy of it (Bartholomew, 1990). Thus, women who are anxious in their relationships are more likely to filter perceptions of their partner's behaviour in a negative fashion, and interpret their partner's behaviour as not being as helpful weight-loss support (see Collins & Feeney, 2004).

Contrary to expectations however, an avoidant attachment style was not related in the same way to perceptions of support. This finding was surprising given past research indicating that avoidantly attached individuals are less likely to seek support (Simpson, Rholes, & Nelligan, 1992) and to perceive support as helpful (e.g. Collins & Feeney, 2004). What then is the reason for the null result in the current study? One possibility is that the current research evaluated every day perceptions of weight-loss support while past research has often focused on support perceptions in stressful situations. Simpson et al. (1992) demonstrated that avoidant individuals reduced their support seeking and giving behaviour as the situation became more anxiety-provoking. Perhaps weight-loss efforts are not stressful enough to activate avoidant behaviours.

*Relationship satisfaction.* Women who reported that they received less frequent or helpful weight-loss support did not report that they were significantly less satisfied in their relationships, nor did they have male partners who reported that they were less satisfied. However, while the results were not significant, there was a trend in the predicted direction for women who were more satisfied with their relationship to report their partner was providing more frequent and helpful weight-loss support ( $r = .22$  and  $.23$ ). The lack of significant results is likely due to power problems, and given a larger sample size these results would have been significant.

This trend is in line with research suggesting that more support is provided within the context of a satisfying relationship (Collins & Feeney, 2000). Partners in a satisfying relationship are more likely to feel committed and want to provide support to their partner. The provision of this support then appears to further increase relationship satisfaction, with support being an important aspect of a satisfying close relationship (Pasch et al., 1997). It is also likely that if female dieters' feel close to their partners and happy within their relationships they are more likely to interpret ambiguous behaviours as being supportive via the mental filter of the understanding of their relationship as a good one. It is important to note again however that these predicted findings did not reach significance levels, and further research is required with a larger sample to investigate this finding.

### ***Dieting Support and Outcomes***

*Healthy dieting.* Although very little research has looked at the role of weight-loss support in everyday dieting efforts, the beneficial effect of inclusion of spouses in weight-loss treatment programs (McLean et al., 2003) suggests that intimate partners are effective in increasing dieting

efforts. Consistently, in this study women who reported that their partners were providing more frequent weight-loss related support were doing more healthy dieting. Partners are a particularly important source of weight-loss support as they have opportunities for input in everyday situations – encouragement at times when women feel like giving up their diet, going for walks together after work, helping cook healthier meals, and so on. This novel finding suggests the importance of partner input in maintaining dieting attempts after weight-loss treatment programs.

Although women who were doing more healthy dieting reported that their partners were providing more frequent weight-loss related support, these women did not report that their partners were more helpful in their weight-loss efforts as was expected. This indicates that weight-loss support behaviours which are perceived as helpful by dieting women do not ultimately result in greater use of healthy dieting behaviours. Interestingly, a number of women commented in their questionnaires that they found it helpful when their partner accepted and loved them regardless of their weight. For example, one woman noted how helpful it was that her partner “never suggests I need to lose weight. He always tells me that I am beautiful without solicitation regardless of what weight I am”. While behaviours such as this were generally perceived as helpful by participants, it seems likely that they do not in reality encourage the use of weight-loss techniques.

Unfortunately, the effect of differing levels of dieting support on weight-loss or body satisfaction over time was unable to be evaluated due to a lack of variance in weight change or body satisfaction amongst the participants. This may be an artefact of the findings that naturalistic dieting does not result in great levels of weight-loss (Presnell et al., 2008).

*Eating disordered attitudes and unhealthy dieting.* Results generally indicated as predicted that women's use of unhealthy dieting methods was not related to weight-loss support perceptions. Further, women who had more dysfunctional attitudes towards eating and their bodies actually perceived their partners were providing less weight-loss support. This may be due to an awareness of partners that unhealthy dieting is destructive and thus an unwillingness to support this type of diet. However, it is possible also that as women become more obsessed with the need to lose weight they become more dysfunctional in their attitudes towards eating and towards dieting. In this frame of mind women may feel that support is never enough and thus underrate the level of weight-loss support being provided to them.

Interestingly, not only do the dieting techniques likely affect how much or little support partners are willing to provide, but partner support also appears to influence dieting behaviours. Again, however, this study found that self-esteem may play a crucial moderating role. For women with high self-esteem, perceiving their partner as providing less frequent and helpful weight-loss support was not related to higher levels of unhealthy dieting. For women with low self-esteem, in contrast, perceiving partners as providing less weight-loss support was significantly related to doing more unhealthy dieting. Women with low self-esteem (but not high self-esteem) perhaps over-interpret support behaviours as being indicative of their own weakness and flaws (Murray et al., 2000). Against predictions, self-esteem did not moderate the link between male report of support frequency and female level of unhealthy dieting as had been the case with female report of support frequency. This highlights the fact that it is the female dieters' perceptions of support that ultimately play a role in their own dieting outcomes.

### ***Different Supporters Provide Different Types of Support***

Interestingly, intimate partners were more likely than friends and family to offer instrumental help, but less likely to offer informational help. The relatively higher frequency of instrumental support is perhaps not surprising as our sample of dieters were all living with their partners, allowing a greater number of opportunities to provide instrumental help. Instrumental support is provided in actions such as helping cook a healthy meal, avoiding junk food in front of the dieter, or going for a walk with the dieter. Thus, help from a partner is likely to be a function of shared life activities. The finding that informational weight-loss support is offered less often in romantic relationships also makes sense. Informational weight-loss support involves telling a dieter about better ways to exercise and better foods to eat in order to lose weight. It is not hard to imagine that such advice would not be handled well in an intimate relationship. Thus, a plausible explanation for the lack of informational weight-loss support in romantic relationships is that relationship norms or learned experiences have alerted male partners that informational support is not appropriate in a weight-loss context. This notion is supported in looking through the comments that the dieters made about what they found helpful and unhelpful in their diet. One woman informed us that she found it helpful that her partner “gently enquires as to whether I am making the right food choice when he sees me making a wrong one, trying to prompt me to make the right decision rather than nagging me directly”.

### ***Summary***

Perceptions of weight-loss support from romantic partners are intertwined with the functioning of the relationship. Women who are happy in their relationship and trust their

partner's loving care are more likely to feel supported in their dieting attempts. However, the role of partner support in dieting outcome is dependent in part on the dieter's self-esteem. Perceptions of lack of support appear to motivate women with low but not high self-esteem to turn to extreme, unhealthy dieting techniques.

Weight-loss support provided by romantic partners appears to be beneficial in increasing women's healthy dieting attempts. Further, males appear to be aware that instructing their partner on the best weight-loss strategies may not be appreciated. Instead, these men prefer to provide practical assistance when required.

### **Practical Implications**

The current research has several practical implications for both practitioners and people trying to manage their weight. First, an awareness of the psychological profile of women who are using disordered dieting techniques allows those in the dieting and eating disorders fields to identify women at risk of developing an eating disorder compared with those who are simply using healthy and normal dieting techniques. For women who are at risk of using disordered dieting behaviours, assistance in developing a more positive global sense of self is an important treatment avenue.

Second, for people trying to lose weight, the involvement of a supportive partner is an important part of encouraging healthy dieting techniques. Intimate partners have the opportunity in a number of every day activities, such as preparing dinner, to help or hinder weight-loss

efforts. Having a partner on board with one's diet allows someone in close proximity to reinforce healthy weight-loss behaviours.

Third, this study suggests that relationship functioning is associated with levels of partner support in dieting. Thus, weight-loss treatment programs may benefit from including a counselling component in which a dieter and partner are able to work through any issues that may be hampering dieting and supporting efforts. It is possible that an improvement in relationship satisfaction could lead to an improvement in levels of support and thus success in dieting.

Fourth, the findings have implications for those who are working with both members of a couple in which the woman is dieting. It is important to encourage the partner to provide weight-loss support to women who are low in self-esteem in order to avoid subsequent negative dieting outcomes for these women.

### **Strengths and Limitations**

The current study has some notable strengths. It analysed a wide range of psychological and interpersonal correlates of dieting. Specifically, the separate consideration of healthy and unhealthy dieting in terms of dieting context allowed conclusions to be drawn regarding the different predictors and causal factors regarding these two different forms of dieting. Further, this research proposed and confirmed mediation and moderation models involving self and relationship functioning in association with unhealthy dieting, and plausible alternative explanations were ruled out by controlling for third variables (such as BMI, relationship satisfaction, and healthy dieting).

Second, although previous research has examined the psychological and interpersonal correlates of general social support within intimate relationships, this is the first study to my knowledge to examine these correlates with the specific support provided by romantic partners for weight-loss efforts. In particular, the majority of past research on partner support of weight-loss has focused on spousal involvement in a weight-loss treatment program, and most of these studies were published 20 years ago. The current study examined support of women's every day weight-loss efforts, allowing some new insights into the impact of naturally occurring partner support on use of dieting techniques.

Despite these strengths, several limitations should be considered in interpreting these findings. First, the scope of the study did not allow sufficient time and resources to gather a large sample size, and so the study lacked statistical power. Some of the small to moderate reported correlations may have reached significance with a higher sample size. A lack of power also meant that partner support could not split into subtypes when calculating correlations between partner support and self and relationship functioning. This would be an interesting area for future research.

Second, the difficulty in finding participants forced the use of a mixed sample in terms of overweight and normal weight individuals. It is possible that levels of support and its correlations with interpersonal and intrapersonal variables are different for overweight in comparison to normal weight individuals. In particular, partners may be less likely to support a slimmer individual in their dieting efforts, even if they do not agree that their partner needs to lose weight.

Third, self-report measures of dieting over the past year and dieting support frequency over the prior four weeks were used. This allows some room for misreporting levels of these behaviours. The use of daily diary methodologies would address this issue.

Fourth, all conclusions of the current study were based on correlational research and thus must be drawn with some degree of caution, and even if casual conclusions are reasonable, it is not clear what the direction of causality is. Unfortunately, the current study's longitudinal hypotheses were unable to be investigated due to a lack of variance in weight-loss or body satisfaction change across the participants. This result may simply be a function of the generally poor results that dieting generally produces. Given that weight-loss treatment programs appear to have more beneficial effects on weight-loss than spontaneous dieting efforts, it may be advantageous to investigate the effect of natural partner support within a sample of women involved in a weight-loss treatment program. Alternatively, experimental research could be carried out in which romantic partners providing support to women's individual weight-loss efforts may be trained in weight-loss support provision and the impact of this additional support investigated.

Finally, a large proportion of participants in the current study were university students which may limit the generalisability of these findings. However, an effort was made to include dieting women from the community and a wide range of ages and relationship lengths indicates that these findings may be applied to a range of dieting women in intimate relationships.

## **Conclusion**

The recent rise of the serious conditions of obesity and eating disorders makes the need more urgent to gain a good understanding of the psychological processes involved in dieting behaviours. The current research has contributed to this endeavour by demonstrating the importance of both the intrapersonal and intimate relationship context of dieting support in determining the nature and outcomes of dieting behaviours. In particular, this study has shown that a healthy sense of self helps in being able to avoid eating-disordered dieting, and that a healthy relationship can play a pivotal role in effectively supporting healthy weight-loss efforts.

## References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the strange situation and at home*. Hillsdale, NJ: Erlbaum.
- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed., text revision). Washington, DC: American Psychiatric Association.
- Anders, S.L., & Tucker, J.S. (2000). Adult attachment style, interpersonal communication competence, and social support. *Personal Relationships, 7*, 379-389.
- Barbarin, O. A., & Tirado, M. (1985). Enmeshment, family processes, and successful treatment of obesity. *Family Relations: Journal of Applied Family & Child Studies. Special Issue: The family and health care, 34*(1), 115-121.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal Relationships, 7*, 147-178.
- Bartholomew, K., Cobb, R. J., & Poole, J. A. (1997). Adult attachment patterns and social support processes. In G. Pierce, I. Lakey, B. Sarason & I. Sarason (Eds.), *Sourcebook of social support and personality* (pp. 359-378). New York: Plenum.
- Battle, E. K., & Brownell, K. D. (1996). Confronting a rising tide of eating disorders and obesity: treatment vs. prevention and policy. *Addictive Behaviors, 21*, 755-765.

- Beach, S. R. H., & Gupta, M. (2006). Directive and nondirective spousal support: Differential effects? *Journal of Marital and Family Therapy*, 32(4), 465-477.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression: A treatment manual*. New York: Guilford Press.
- Bellavia, G., & Murray, S. M. (2003). Did I do that? Self-esteem related differences in reactions to romantic partner's mood. *Personal Relationships*, 10(1), 77-95.
- Bennett, D. A., & Cooper, C. L. (2001). Psychological discriminators of subjects at different stages of the eating disturbed spectrum. *Personality and Individual Differences*, 30, 917-929.
- Bentler, P. M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software.
- Black, D. R., Gleser, L. J., & Kooyers, K. J. (1990). A meta-analytic evaluation of couples weight-loss programs. *Health Psychology*, 9(3), 330-347.
- Black, D. R., & Threlfall, W. E. (1989). Partner weight status and subject weight loss: Implications for cost-effective programs and public health. *Addictive Behaviors*, 14(3), 279-289.
- Blain, M., Thompson, J., & Whiffen, V. (1993). Attachment and perceived social support in late adolescence: The interaction between working models of self and others. *Journal of Adolescent Research*, 8(2), 226-241.
- Blaine, B. E., Rodman, J., & Newman, J. M. (2007). Weight loss treatment and psychological well-being: A review and meta-analysis. *Journal of Health Psychology*, 12(1), 66-82.

- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology, 79*(6), 953-961.
- Boyes, A. D., Fletcher, G. J. O., & Latner, J. (2007). Male and Female Body Image and Dieting in the Context of Intimate Relationships. *Journal of Family Psychology, 21*(4), 764-768.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York: Guilford Press.
- Brennan, K. A., & Morris, K. (1997). Attachment styles, self-esteem, and patterns of seeking feedback from romantic partners. *Personality and Social Psychology Bulletin, 23*, 23-31.
- Brink, P. J., & Ferguson, K. (1998). The decision to lose weight. *Western Journal of Nursing Research, 20*(1), 84-103.
- Broberg, A. G., Hjalms, I., & Nevenon, L. (2001). Eating disorders, attachment and interpersonal difficulties: A comparison between 18- to 24-year-old patients and normal controls. *European Eating disorders Review, 9*, 381-396.
- Brown, G., Andrews, B., Harris, T., Adler, Z., & Bridge, L. (1986). Social support, self-esteem and depression. *Psychological Medicine, 16*(4), 813-831.
- Brownell, K. D. (1984). Behavioral, psychological, and environmental predictors of obesity and success at weight reduction. *International Journal of Obesity, 8*(5), 543-550.
- Brownell, K. D., Heckerman, C. L., Westlake, R. J., Hayes, S. C., & Monti, P. M. (1978). The effect of couples training and partner co-operativeness in the behavioral treatment of obesity. *Behavior Research and Therapy, 16*(5), 323-333.

- Brownell, K. D., & Stunkard, A. J. (1981). Couples training, pharmacotherapy, and behavior therapy in the treatment of obesity. *Archives of General Psychiatry*, 38(11), 1124-1229.
- Button, E. J., Loan, P., Davies, J., & Sonuga-Barke, E. J. (1997). Self-esteem, eating problems, and psychological well-being in a cohort of schoolgirls aged 15-16. *International Journal of Eating Disorders*, 21, 39-47.
- Button, E. J., Sonuga-Barke, E. J. S., Davies, J., & Thompson, M. (1996). A prospective study of self-esteem in the prediction of eating problems in adolescent schoolgirls: Questionnaire findings. *British Journal of Clinical Psychology*, 35, 193-203.
- Carels, R. A., & Baucom, D. H. (1999). Support in marriage: Factors associated with on-line perceptions of support helpfulness. *Journal of Family Psychology*, 13(2), 131-144.
- Cash, T., Theriault, J., & Annis, N. (2004). Body image in an interpersonal context: Adult attachment, fear of intimacy, and social anxiety. *Journal of Social & Clinical Psychology. Special Issue: Body Image and Eating Disorders*, 23(1), 89-103.
- Cobb, R. J., Davila, J., & Bradbury, T. N. (2001). Attachment security and marital satisfaction: The role of positive perceptions and social support. *Personality & Social Psychology Bulletin*, 27(9), 1131-1143.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2 ed.). Hillsdale, NJ: Erlbaum.
- Cohen, S., & McKay, G. (1984). Interpersonal relationships as buffers of the impact of psychological stress on health. In A. Baum, J. Singer & S. Taylor (Eds.), *Handbook of Psychology and Health*. Hillsdale, NJ: Erlbaum.

- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357.
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, 78(6), 1053-1073.
- Collins, N. L., & Feeney, B. C. (2004). Working models of attachment shape perceptions of social support: Evidence from experimental and observational studies. *Journal of Personality and Social Psychology*, 87(3), 363-383.
- Crow, S., Eisenberg, M. E., Story, M., & Neumark-Sztainer, D. (2006). Psychosocial and behavioral correlates of dieting among overweight and non-overweight adolescents. *Journal of Adolescent Health*, 38(5), 569-574.
- Cutrona, C. E. (1996). Social support as a determinant of marital quality: The interplay of negative and supportive behaviours. In G. Pierce & B. Sarason (Eds.), *Handbook of social support and the family* (pp. 173-194). New York: Plenum Press.
- Cutrona, C. E., Cohen, B. B., & Igram, S. (1990). Contextual determinants of the perceived supportiveness of helping behaviors. *Journal of Social and Personal Relationships*. *Special Issue: Predicting, activating and facilitating social support*, 7(4), 553-562.
- Cutrona, C. E., & Russell, D. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. Sarason, I. G. Sarason & G. Pierce (Eds.), *Social Support: An interactional view* (pp. 319-366). New York: Wiley.
- Cutrona, C. E., Shaffer, P. A., Wesner, K. A., & Gardner, K. A. (2007). Optimally matching support and perceived spousal sensitivity. *Journal of Family Psychology*, 21(4), 754-758.

- Cutrona, C. E., & Suhr, J. A. (1994). Social support communication in the context of marriage: An analysis of couples' supportive interactions. In B. R. Burleson, T. L. Albrecht & I. G. Sarason (Eds.), *Communication of social support: Messages, interactions, relationships, and community* (pp. 113-135). Thousand Oaks, CA: Sage.
- Davis, M. H., Morris, M. M., & Kraus, L. A. (1998). Relationship-specific and global perceptions of social support: associations with well-being and attachment. *Journal of Personality and Social Psychology, 74*(2), 468-481.
- Dehle, C., Larsen, D., & Landers, J. (2001). Social support in marriage. *American Journal of Family Therapy, 29*(4), 307-324.
- Dodgson, P. G., & Wood, J. V. (1998). Self-esteem and the cognitive accessibility of strengths and weaknesses after failure. *Journal of Personality and Social Psychology, 75*(1), 178-197.
- Dunkel-Schetter, C., & Bennett, T. L. (1990). Differentiating the cognitive and behavioral aspects of social support. In B. Sarason, I. Sarason & G. Pierce (Eds.), *Social support: An interactional view*. New York: Wiley.
- Elgin, J., & Pritchard, M. E. (2006). Adult attachment and disordered eating in undergraduate men and women. *Journal of College Student Psychotherapy, 21*(2), 25-40.
- Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behavior therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*(5), 509-528.

- Feeney, B. C. (2004). A secure base: Responsive support of goal strivings and exploration in adult intimate relationships. *Journal of Personality and Social Psychology*, *87*(5), 631-648.
- Feeney, B. C., & Collins, N. L. (2003). Motivations for caregiving in adult intimate relationships: Influences on caregiving behavior and relationship functioning. *Personality & Social Psychology Bulletin*, *29*(8), 950-968.
- Fletcher, G., Simpson, J., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality & Social Psychology Bulletin*, *26*(3), 340-354.
- Fletcher, G., Tither, J. M., O'Loughlin, C., Friesen, M., & Overall, N. (2004). Warm and homely or cold and beautiful? Sex differences in trading off traits in mate selection. *Personality & Social Psychology Bulletin*, *30*(6), 659-672.
- Florian, V., Mikulincer, M., & Bucholtz, I. (1995). Effects of adult attachment style on the perception and search for social support. *The Journal of Psychology*, *129*(6), 665-676.
- French, S. A., & Jeffery, R. W. (1994). Consequences of dieting to lose weight: Effects on physical and mental health. *Health Psychology*, *13*(3), 195-212.
- French, S. A., Perry, C. L., Leon, G. R., & Fulkerson, J. A. (1995). Dieting behaviors and weight change history in female adolescents. *Health Psychology*, *14*(6), 548-555.
- Furnham, A., Dias, M., & McClelland, A. (1998). The role of body weight, waist-to-hip ratio, and breast size in judgements of female attractiveness. *Sex Roles*, *39*, 311-326.
- Garner, D. (1991). *Eating Disorder Inventory-2: Professional Manual*. Florida: Psychological Assessment Resources.

- Gleaves, D. H., Brown, J. D., & Warren, C. S. (2004). The continuity/discontinuity models of eating disorders: A review of the literature and implications for assessment, treatment, and prevention. *Behavior Modification, 28*(6), 739-762.
- Gorin, A., Phelan, S., Tate, D., Sherwood, N., Jeffery, R. W., & Wing, R. R. (2005). Involving support partners in obesity treatment. *Journal of Consulting and Clinical Psychology, 73*(2), 341-343.
- Gracia, E., & Herrero, J. (2004). Personal and situational determinants of relationship-specific perceptions of social support. *Social Behavior and Personality, 32*(5), 459-476.
- Granillo, T., Jones-Rodriguez, G., & Carvajal, S. C. (2005). Prevalence of eating disorders in Latina adolescents: associations with substance use and other correlates. *Journal of Adolescent Health, 36*, 214-220.
- Grigg, M., Bowman, J., & Redman, S. (1996). Disordered eating and unhealthy weight reduction practices among adolescent females. *Preventive Medicine, 25*, 748-756.
- Grover, V. P., Keel, P. K., & Mitchell, J. P. (2003). Gender differences in implicit weight identity. *International Journal of Eating Disorders, 34*, 125-135.
- Gurung, R. A. R., Sarason, B. R., & Sarason, I. G. (1997). Personal characteristics, relationship quality, and social support perceptions and behavior in young adult romantic relationships. *Personal Relationships, 4*, 319-339.
- Hart, J., Einav, C., Weingarten, M. A., & Stein, M. (1990). The importance of family support in a behavior modification weight loss program. *Journal of the American Dietetic Association, 90*(9), 1270-1271.

- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524.
- Heatherton, T. F., Mahamedi, F., Striepe, M., Field, A. E., & Keel, P. K. (1997). A 10-year longitudinal study of body weight, dieting, and eating disorder symptoms. *Journal of Abnormal Psychology*, 106(1), 117-125.
- Hogan, B. E., Linden, W., & Najarian, B. (2002). Social support interventions: Do they work? *Clinical Psychology Review*, 22(3), 381-440.
- Holahan, C. J., Moos, R. H., & Bonin, L. (1997). Social support, coping, and psychological adjustment: A resources model. In G. Pierce, I. Lakey, B. Sarason & I. Sarason (Eds.), *Sourcebook of social support and personality* (pp. 169-186). New York: Plenum Press.
- House, J. S., Kahn, R. L., McLeod, J. D., & Williams, D. (1985). Measures and concepts of social support. In S. Cohen & S. Syme (Eds.), *Social support and health* (pp. 83-108). San Diego: Academic Press.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, 241(4865), 540-545.
- Huntsinger, E. T., & Luecken, L. J. (2004). Attachment relationships and health behavior: The mediational role of self-esteem. *Psychology & Health*, 19(4), 515-526.
- Irving, L. M., & Neumark-Sztainer, D. (2002). Integrating the prevention of eating disorders and obesity: Feasible or futile? *Preventive Medicine*, 34, 229-309.
- Israel, A. C., & Saccone, A. J. (1979). Follow-up of effects of choice of mediator and target of reinforcement on weight loss. *Behavior Therapy*, 10(2), 260-265.

- Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: Application of risk terminology and suggestions for a general taxonomy. *Psychological Bulletin, 130*(1), 19-65.
- Jarry, J., Polivy, J., Herman, C. P., Arrowood, A. J., & Pliner, P. (2006). Restrained and unrestrained eaters' attributions of success and failure to body weight and perception of social consensus: The special case of romantic success. *Journal of Social and Clinical Psychology, 25*(8), 885-905.
- Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: A prospective analysis. *Journal of Abnormal Psychology, 114*(1), 119-125.
- Kashubeck-West, S., Mintz, L. B., & Weigold, I. (2005). Separating the effects of gender and weight-loss desire on body satisfaction and disordered eating behavior. *Sex Roles, 53*(7-8), 505-518.
- Kayman, S., Bruvold, W., & Stern, J. S. (1990). Maintenance and relapse after weight loss in women: behavioral aspects. *The American Journal of Clinical Nutrition, 52*(5), 800-807.
- Keel, P. K., Baxter, M. G., Heatherton, T. F., & Joiner, T. E. (2007). A 20-year longitudinal study of body weight, dieting, and eating disorder symptoms. *Journal of Abnormal Psychology, 116*(2), 422-432.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: The Guilford Press.
- Koenig, L. J., & Wasserman, E. L. (1995). Body image and dieting failure in college men and women: Examining links between depression and eating problems. *Sex Roles, 32*(3-4), 225-249.

- Larose, S., & Boivin, M. (1998). Attachment to parents, social support expectations, and socioemotional adjustment during the high school-college transition. *Journal of Research on Adolescence*, 8(1), 1-27.
- Levitt, D. H. (2003). Drive for thinness and fear of fat: Separate yet related constructs? *Eating Disorders*, 11, 221-234.
- Marcoux, B. C., Trenkner, L. L., & Rosenstock, I. M. (1990). Social networks and social support in weight loss. *Patient Education and Counseling*, 15(3), 229-238.
- Markey, C. N., & Markey, P. M. (2005). Relations between body image and dieting behaviors: An examination of gender differences. *Sex Roles*, 53(7-8), 519-530.
- Markey, C. N., Markey, P. M., & Birch, L. L. (2001). Interpersonal predictors of dieting practices among married couples. *Journal of Family Psychology*, 15(3), 464-475.
- Markey, C. N., Markey, P. M., & Birch, L. L. (2004). Understanding women's body satisfaction: The role of husbands. *Sex Roles*, 51(3-4), 209-216.
- McLean, N., Griffin, S., Toney, K., & Hardeman, W. (2003). Family involvement in weight control, weight maintenance and weight-loss interventions: a systematic review of randomised trials. *International Journal of Obesity*, 27, 987-1005.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: The Guilford Press.
- Moreira, J., Silva, M., Moleiro, C., Aguiar, P., Andrez, M., Bernardes, S., et al. (2003). Perceived social support as an offshoot of attachment style. *Personality and Individual Differences*, 34(3), 485-501.

- Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology, 78*(3), 478-498.
- Neumark-Sztainer, D., Sherwood, N., French, S. A., & Jeffery, R. W. (1999). Weight control behaviors among adult men and women: Cause for concern? *Obesity Research, 7*, 672-676.
- Neumark-Sztainer, D., Story, M., Dixon, L. B., & Murray, D. M. (1998). Adolescents engaging in unhealthy weight control behaviors: Are they at risk for other health-compromising behaviors? *American Journal of Public Health, 88*(6), 952-955.
- Neumark-Sztainer, D., Wall, M. M., Story, M., & Perry, C. L. (2003). Correlates of unhealthy weight-control behaviours among adolescents: Implications for prevention programs. *Health Psychology, 22*(1), 88-98.
- O'Dea, J. A., & Abraham, S. (2000). Improving the body image, eating attitudes, and behaviors of young male and female adolescents: A new educational approach that focuses on self-esteem. *International Journal of Eating Disorders, 28*(1), 43-57.
- Overall, N., Fletcher, G., & Simpson, J. (2006). Regulation processes in intimate relationships: The role of ideal standards. *Journal of Personality and Social Psychology, 91*(4), 662-685.
- Parham, E. S. (1993). Enhancing social support in weight loss management groups. *Journal of the American Dietetic Association, 93*(10), 1152-1156; quiz 1157-1158.
- Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology, 66*(2), 219-230.

- Pasch, L. A., Bradbury, T. N., & Sullivan, K. T. (1997). Social support in marriage: An analysis of intraindividual and interpersonal components. In G. Pierce, I. Lakey, B. Sarason & I. Sarason (Eds.), *Sourcebook of social support and personality*. New York: Plenum.
- Patton, G. C., Johnson-Sabine, E., Wood, K., Mann, A. H., & Wakeling, A. (1990). Abnormal eating attitudes in London schoolgirls - a prospective epidemiological study: outcome at twelve-month follow-up. *Psychological Medicine*, *20*, 383-394.
- Polivy, J., & Herman, C. P. (1985). Dieting and binge eating: A causal analysis. *American Psychologist*, *40*, 193-204.
- Polivy, J., & Herman, C. P. (1987). Diagnosis and treatment of normal eating. *Journal of Consulting and Clinical Psychology*, *55*(5), 635-644.
- Presnell, K., Stice, E., & Tristan, J. (2008). Experimental investigation of the effects of naturalistic dieting on bulimic symptoms: Moderating effects of depressive symptoms. *Appetite*, *50*, 91-101.
- Rieder, S., & Ruderman, A. (2007). The development and validation of the weight management support inventory. *Eating Behaviors*, *8*, 39-47.
- Roberts, J. E., & Gotlib, I. H. (1997). Social support and personality in depression: Implications from quantitative genetics. In G. Pierce, I. Lakey, B. Sarason & I. Sarason (Eds.), *Sourcebook of social support and personality* (pp. 187-214). New York: Plenum Press.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

- Sarason, B., Pierce, G., & Sarason, I. (1990). Social support: the sense of acceptance and the role of relationships. In B. Sarason, I. Sarason & G. Pierce (Eds.), *Social support: an interactional view* (pp. 97-128). New York: Wiley.
- Sarason, B., Pierce, G., Shearin, E. N., Sarason, I., Waltz, J. A., & Poppe, L. (1991). Perceived social support and working models of self and actual others. *Journal of Personality and Social Psychology*, *60*, 273-287.
- Schafer, R. B., Keith, P. M., & Schafer, E. (1994). The effects of marital interaction, depression and self-esteem on dietary self-efficacy among married couples. *Journal of Applied Social Psychology*, *24*(24), 2209-2222.
- Sharpe, T. M., Killen, J. D., Bryson, S. W., Shisslak, C. M., Estes, L. S., Gray, N., et al. (1998). Attachment style and weight concerns in preadolescent and adolescent girls. *International Journal of Eating Disorders*, *23*(1), 39-44.
- Simpson, J., Rholes, W., & Nelligan, J. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology*, *62*(3), 434-446.
- Simpson, J., Rholes, W., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology*, *71*(5), 899-914.
- Stice, E., & Bearman, S. K. (2001). Body-image and eating disturbances prospectively predict increases in depressive symptoms in adolescent girls: A growth curve analysis. *Developmental Psychology*, *37*(5), 597-607.
- Stice, E., Cameron, R. P., Killen, J. D., Hayward, C., & Barr Taylor, C. (1999). Naturalistic weight-reduction efforts prospectively predict growth in relative weight and onset of

- obesity among female adolescents. *Journal of Consulting and Clinical Psychology*, 67(6), 967-974.
- Stice, E., Hayward, C., Cameron, R. P., Killen, J. D., & Taylor, C. B. (2000). Body-image and eating disturbances predict onset of depression among female adolescents: a longitudinal study. *Journal of Abnormal Psychology*, 109(3), 438-444.
- Tantleff-Dunn, S., & Thompson, J. K. (1995). Romantic partners and body image disturbance: Further evidence for the role of perceived-actual disparities. *Sex Roles*, 33(9-10), 589-605.
- Tiggemann, M. (2005). Body dissatisfaction and adolescent self-esteem: Prospective findings. *Body Image*, 2, 129-135.
- Tiggemann, M., & Rothblum, E. D. (1997). Gender differences in internal beliefs about weight and negative attitudes towards self and others. *Psychology of Women Quarterly*, 21, 581-593.
- Twamley, E. W., & Davis, M. C. (1999). The sociocultural model of eating disturbance in young women: The effects of personal attributes and family environment. *Journal of Social & Clinical Psychology*, 18(4), 467-489.
- Vogeltanz-Holm, N. D., Wonderlich, S. A., Lewis, B. A., Wilsnack, S. C., Harris, T., Wilsnack, R. W., et al. (2000). Longitudinal predictors of binge eating, intense dieting, and weight concerns in a national sample of women. *Behavior Therapy*, 31, 221-235.
- Vohs, K. D., Bardone, A. M., Joiner, T. E., Abramson, L. Y., & Heatherton, T. F. (1999). Perfectionism, perceived weight status, and self-esteem interact to predict bulimic symptoms: a model of bulimic symptom development. *Journal of Abnormal Psychology*, 4, 695-700.

- Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality and social activity. *Journal of Personality and Social Psychology*, *55*, 1011-1023.
- Wing, R. R., & Jeffery, R. W. (1999). Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *Journal of Consulting and Clinical Psychology*, *67*(1), 132-138.
- Wiseman, M. A., Gray, J. J., Mosimann, J. E., & Athrens, A. H. (1992). Cultural expectations of thinness in women: an update. *International Journal of Eating Disorders*, *11*, 85-89.
- Zimmerman, R., & Connor, C. (1989). Health promotion in context: The effects of significant others on health behavior change. *Health Education Quarterly*, *16*(1), 57-75.

# Appendix A

## Eating Disorder Diagnostic Criteria

The diagnostic criteria for the three categories of eating disorder according to the DSM-IV-TR (American Psychiatric Association, 2000) are outlined below.

### *Anorexia Nervosa*

- A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).
- B. Intense fear of gaining weight or becoming fat, even though underweight.
- C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.
- D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)

Specify type:

1. *Restricting Type*: during the current episode of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

2. *Binge-Eating/Purging Type*: during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

### ***Bulimia Nervosa***

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
  1. eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances
  2. a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)
- B. Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviours both occur, on average, at least twice a week for 3 months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Specify type:

1. *Purging Type*: during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

2. *Nonpurging Type*: during the current episode of Bulimia Nervosa, the person used other inappropriate compensatory behaviours, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

### ***Eating Disorder Not Otherwise Specified***

The Eating Disorder Not Otherwise Specified category is for disorders of eating that do not meet the criteria for any specific Eating Disorder. Examples include:

1. For females, all of the criteria for Anorexia Nervosa are met except that the individual has regular menses.
2. All of the criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
3. All of the criteria for Bulimia Nervosa are met except that the binge Eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.
4. The regular use of inappropriate compensatory behavior by an individual normal body weight after eating small amounts of food (e.g. self-induced vomiting after the consumption of two cookies).
5. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.
6. Binge-eating disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviours characteristic of Bulimia Nervosa.

## Appendix B

### Weight-Loss Support Questions in Order of Mean Frequency Level (Female Report of Partner Frequency)

Question	Subscale	Mean	SD
My partner eats low calorie/ low fat foods	Instrumental	3.70	2.39
My partner listens to my concerns about the difficulty of dieting.	Emotional	3.64	1.95
My partner plays sports or exercises with me	Instrumental	3.11	2.14
My partner avoids buying junk food or having it in the house.	Instrumental	3.05	2.44
M partner compliments me when he notices I've lost weight.	Appraisal	3.05	1.67
My partner compliments me on sticking to an exercise routine.	Appraisal	2.93	2.03
My partner tells me that I look like I'm in better shape	Appraisal	2.91	1.68
My partner goes walking or jogging with me for exercise	Instrumental	2.86	2.08
My partner avoids eating junk food or fattening foods in front of me.	Instrumental	2.86	2.46
My partner reminds me to watch what I eat	Emotional	2.84	1.83
My partner reminds me to exercise or to go to the gym.	Emotional	2.80	2.06
My partner tells me that he is confident that I can lose weight	Emotional	2.70	1.82
My partner asks what exercises I did to lose weight	Appraisal	2.43	1.89
My partner goes on a diet with me	Instrumental	2.30	2.26
My partner splits a dessert or meal with me to help me to reduce the amount I eat	Instrumental	2.14	1.66
My partner tells me ways to change my exercise routine so I won't get bored	Informational	2.02	1.65
My partner tells me he is impressed with how physically fit I am	Appraisal	1.82	1.23
My partner tells me about different types of exercise I should do to get a balanced and complete work out	Informational	1.82	1.56
My partner tells me about foods that I could try that are low in fat and calories.	Informational	1.75	1.46
My partner gives me pep talks about sticking to my diet	Emotional	1.66	1.12
My partner tells me the best way to do exercises for weight loss.	Informational	1.64	1.24
My partner tells me about the calorie or fat content of foods	Informational	1.61	1.22
My partner tells me that he's concerned about my eating habits	Emotional	1.61	1.28
My partner tells me about the exercises that have helped him to lose weight.	Informational	1.36	1.01
My partner asks how I lost weight because he's impressed with my success	Appraisal	1.27	0.82
My partner tells me about the things that he has done to lose weight.	Informational	1.25	0.58

## Appendix C

### Anxious Attachment and the Link Between Weight-Loss Support Frequency and Healthy Dieting

Table 8

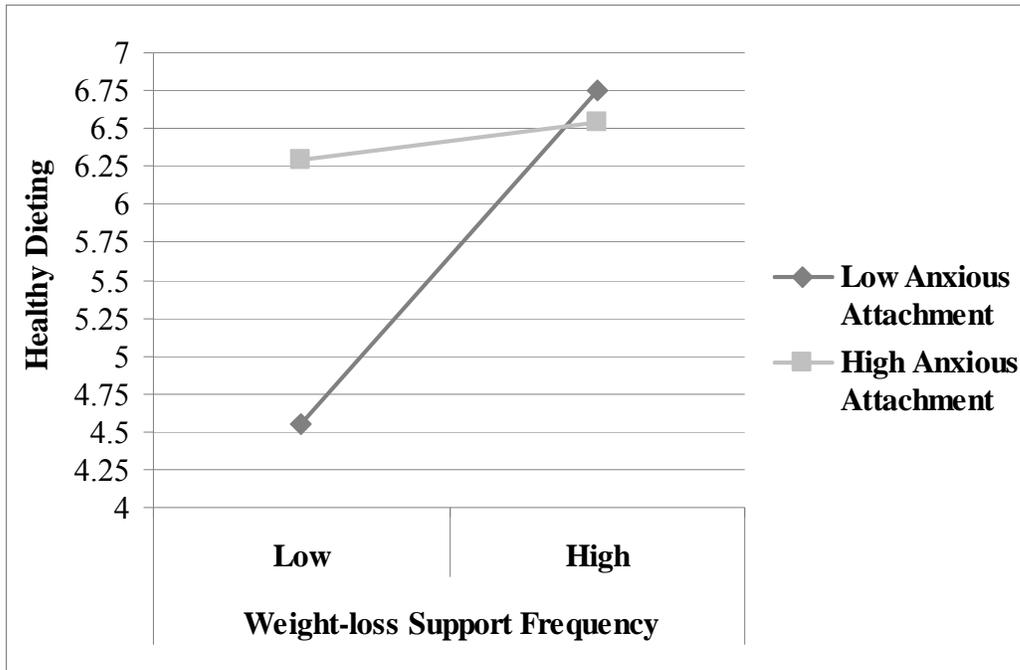
*Regression Coefficients For Testing Whether Anxious Attachment Moderated the Link between Weight-Loss Support Frequency and Healthy Dieting.*

Independent and Moderator Variables	Healthy Dieting $\beta$
Weight-Loss Support Frequency	.37**
Anxious Attachment	.34**
Interaction	-.33*

Note: †  $p < .10$  \* $p < .05$  \*\*  $p < .01$ .

Although no prediction was made, a moderating effect of anxious attachment on the link between weight-loss support frequency and healthy dieting was found. The results in Table 8 show that higher levels of weight-loss support frequency and anxious attachment (marginally) were both associated independently with a higher level of healthy dieting. Further, there was a significant interaction between anxious attachment and weight-loss support frequency. This interaction is illustrated in Figure 8. Following the procedures outlined by Aiken and West (1991) each slope was then tested for significance. The slope shown in Figure 8 for individuals low on anxious attachment was significant,  $\beta = .76$  ( $t = 3.60, p < .01$ ). However, the slope for the individuals high on anxious attachment was not significant,  $\beta = .09$  ( $t = .48$ ). Thus, for women low in anxious attachment, when their partner was providing more frequent weight-loss support they were doing significantly more healthy dieting. For women high in anxious attachment the

frequency of weight-loss support was not significantly related to how much healthy dieting they were doing.



*Figure 11.* Interaction of weight-loss support frequency and anxious attachment as related to healthy dieting. Low scores are one standard deviation below the mean; high scores are one standard deviation above the mean.