

## ABSTRACT

Title of Document: COLLEGE WOMEN AND  
DISORDERED EATING  
SYMPTOMATOLOGY: A  
RELATIONAL-CULTURAL  
PERSPECTIVE

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Doctor of Philosophy, 2014

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Scholars have long been trying to understand the complex risk factors for and protective factors against disordered eating symptoms at the clinical and subclinical levels. Our understanding of the connection between relational factors, in particular, and disordered eating may be enhanced by the measurement of constructs from feminist theories that provide a richer and more culturally-specific perspective on women's psychological development, as gender alone remains the single most robust predictor. Using a sample of 451 college women, this study introduced two constructs from relational-cultural theory, perceived mutuality and self-silencing, to a model examining the sociocultural, personal, and relational factors that predict disordered eating. In addition, narrative responses were collected to examine who in participants' lives most strongly influenced,

both positively and negatively, their body image and relationship with food, and how. In addition, differences between clinical and subclinical groups of participants were explored on key study variables. Multiple regression analyses revealed that the variables of sociocultural pressure for thinness, internalization of the thin ideal, and body dissatisfaction uniquely predicted significant variance in disordered eating. Perceived mutuality and self-silencing did not predict significant, unique variance in disordered eating. However, self-silencing did mediate the relationship between perceived mutuality and disordered eating. Furthermore, a series of one-way ANOVAs revealed statistically significant differences between clinical and subclinical groups on key variables. Participants in the clinical group, as compared to participants in the subclinical group, scored significantly *higher* on: self-silencing; internalization of the thin ideal; body dissatisfaction; poor interoceptive awareness; and perceived sociocultural pressures for thinness, and significantly *lower* on: perceived mutuality (across mother, father, and friends); perceived mutuality with mother; and perceived mutuality with father. Analyses revealed that there were not significant differences between the two groups on social support or on perceived mutuality with friends. The qualitative findings broadened our understanding of the ways in which family, friends, romantic partners, and society both positively and negatively influence college women's body image and relationship with food through messages and modeling. Limitations, implications, and directions for future research are discussed.

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RELATIONAL-CULTURAL PERSPECTIVE

By

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Dissertation submitted to the Faculty of the Graduate School of the  
University of Maryland, College Park, in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
2014

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## **Acknowledgements**

I would like to thank my advisor, Dr. Mary Ann Hoffman, for her exceptional support during the process of writing this dissertation, and across my graduate school career. Her dedication to mentoring the next generation of counseling psychologists is unparalleled. I am so grateful to have had the opportunity to grow in the context of such an encouraging, genuine, and warm relationship with her. I thank my dissertation committee: Dr. Darlene Atkins, Dr. Clara Hill, Dr. Matthew Miller, and Dr. William Strein. Their thoughtful contributions toward this project deeply enhanced the work.

I am grateful for the unyielding support of the professors and clinical supervisors with whom I have crossed paths across my doctoral program. They have taught me how to appreciate the richness and complexity of the human experience, and to approach my encounters – both academic and clinical – with empathy, humility, and respect. Thank you to my clients and participants for inspiring this work through sharing their experiences with candor and courage. And to my peers in the doctoral program – I am indebted to you. Your warmth, support, humor, and forever friendship fills my heart to overflowing.

And last, but certainly not least, thank you to my parents for loving me unconditionally and always believing in me. Neither this dissertation project, nor my doctoral training, would have been possible without your support, and I am incredibly grateful. Your example of living with a big hearts and open minds is at the core of all that I do.

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## CHAPTER ONE

### Introduction

The use of unhealthy weight control behaviors by adolescents and young adults has been referred to as an epidemic in Western countries (Chamay-Weber, Narring, and Michaud, 2005). Indeed, research shows that eating disorders are the third most prevalent chronic illness among adolescents, after asthma and diabetes (Fisher, Golden, Katzman, & Kreipe, 1995; Maine & Bunnell, 2010). Although eating disorders are determined by a host of factors, adolescent girls and young women are particularly at risk as gender alone remains the single most powerful predictor (Maine & Bunnell, 2010). Indeed, estimates suggest that as many as 90% of individuals diagnosed with an eating disorder are women (American Psychiatric Association, 1994, 2000, 2013). Furthermore, as media images of “perfect” bodies that represent the thin ideal have become global, eating disorders are now being diagnosed in more than 40 countries worldwide, and in every corner of the United States (Maine & Bunnell, 2010). Although the prevalence of full-syndrome eating disorders is relatively rare (e.g., between 1% and 3% of the female population are diagnosed with Anorexia Nervosa or Bulimia Nervosa), many women (e.g., 19% to 32%; Mulholland & Mintz, 2001) suffer from symptoms of disordered eating within the subclinical range. Now, with the publication of the 5<sup>th</sup> edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association, 2013), a greater range of symptoms related to eating are being labeled as “clinically disordered.” This highlights the need for researchers to study disordered eating symptoms at different levels across the spectrum of severity.

Empirical research has shown that adolescents and college-age women have notably high rates of subclinical body dissatisfaction, dieting, and problematic eating (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997). One study showed that, at any given time, two-thirds of 14- to 18-year-old girls are on a diet (Rosen, Compas, & Tacy, 1993). In a study about the behaviors that high school girls and college-aged women used to control their weight, the following methods were endorsed: frequently skip meals (59%), eating fewer than 1,200 calories per day (36%), eliminating fats (30%), eliminating carbohydrates (26%), fasting for more than 24 hours (25%), using laxatives (7%), using diuretics (6%), and vomiting after eating (4%) (Tylka & Subich, 2002). Additionally, in a study of female, first-year college students, 50% of respondents endorsed that they participated in binge eating, and 80% reported being on a diet (Striegel-Moore, Silberstein, Grunberg, & Rodin, 1990). In a study of young women across the college years, 61% reported that they occasionally or regularly used extreme measures to control their weight (Mintz & Betz, 1988). Participants' behaviors included fasting, appetite suppressants, diuretics, or purging after eating (Mint & Betz, 1988).

Across the spectrum of disordered eating, girls and women commonly experience psychological comorbidities, physical sequelae, and a significant impairment in their quality of life (Tylka & Subich, 2004). For instance, issues with mood, such as dysthymia, depression and anxiety, are common in individuals with partial and full eating disorder symptomatology (Dancyger & Garfinkel, 1995; Lewinsohn, Striegel-Moore, & Seeley, 2000). Additionally, girls and women with eating disorder symptomatology may also experience high levels of perfectionism and impulsivity (Grilo 2002; Lewinsohn et al., 2000), and low levels of self-esteem and relationship satisfaction (Fairburn, Cooper,

& Shafran, 2003). Suicidal ideation, self-injury and substance abuse are also experienced by girls and women with disordered eating (Devaud, Jeannin, Narring, Ferron, & Michaud, 1998; Lewinsohn et al., 2000).

The physical consequences and medical complications of clinical and subclinical levels of eating disorder symptomatology have been documented (Chamay-Weber et al., 2005). These girls and women commonly suffer from fatigue, headaches, and lightheadedness (Rome & Ammerman, 2003). Up to three-quarters of girls and women with eating disorder symptomatology experience gastrointestinal complaints (Fisher et al., 1995; Rome & Ammerman, 2003), and some experience cardiovascular symptoms (Chamay-Weber et al., 2005; Rome & Ammerman, 2003). Menstrual abnormalities are commonly reported in over 90% of pubertal women with clinical and subclinical levels of disordered eating (Kreipe, Strauss, Hodgman, & Ryan, 1989). Others experience osteopenia, or decreased bone density, which results in an increased risk of fracture and osteoporosis (Bachrach, Guido, Katzman, Litt, & Marcus, 1990).

The overall well-being of girls and women with eating disorder symptomatology is also often compromised. For instance, college women with and at risk for clinical levels of eating disorder symptomatology reported significantly lower levels of life satisfaction and positive affect, and higher levels of negative affect, as compared to those without eating disorder symptomatology (Kitsantas, Gilligan, & Kamata, 2003). Considerable impairment is also present in the health-related quality of life of individuals with clinical and subclinical eating disorder symptomatology, and their caregivers (Engel, Adair, Las Hayas, & Abraham, 2009), particularly in the areas of physical functioning, bodily pain, general health, and vitality (Padierna, Quintana, Arostegui, Gonzalez, &

Horcajo, 2000). Furthermore, research by Heatherton and colleagues (1997) suggests that one in five women with eating disorder symptomatology during their college years still experience symptoms 10 years later, documenting the possible long-term consequences.

As is evident, there is a significant prevalence of eating disorder symptomatology when both subclinical and clinical levels are taken into account. Furthermore, as reviewed above, girls and women with subclinical levels of eating disorder symptomatology experience many of the same psychological and physical consequences that are present in women with full syndrome eating disorders. These consequences are often impairing and sometimes long-term across the spectrum of severity. With these considerations in mind, recent research has highlighted the importance of measuring eating disorder symptomatology along a continuum to better understand the etiology, assessment, and treatment of both clinical and subclinical eating disorders in girls and women.

Although relatively little information is available on the experiences of women who do not meet full diagnostic criteria, it appears that women with partial syndrome symptoms still experience considerable negative consequences in both the psychological and physical domains, and thus, it is important to learn more about this group (Kashubeck-West & Mintz, 2001). Consequently, in order to address these gaps, the current study sampled from a group of college women with the aim of recruiting an ethnically diverse sample of participants who experience a range of disordered eating symptoms. Studying college women who report a range of eating disorder symptomatology contributes to our understanding of the experiences of individuals with

clinical and subclinical levels of eating disorder symptomatology (Franko & Omori, 1999).

Furthermore, the “cultural milieu” of the college experience represents a specific set of environmental stressors that confer risk for the onset of disordered eating (Maine, 2001). Some of these environmental stressors include: relocating geographically for college; losing proximal social support networks; being exposed, sometimes for the first time, to an atmosphere of high achievement and high stress levels; experiencing an increase in negative life events; and undergoing changes in one’s roles and identities (Rosen et al., 1993; Striegel-Moore et al, 1986). Additionally, the high prevalence of eating disorders in college settings can trigger the development or intensification of disordered eating patterns (Compas, Wagner, Slavin, & Vannata, 1986; Fairburn & Beglin, 1990; Hesse-Biber, Leavy, Quinn, & Zoino, 2006). Research has shown that being within an environment in which disordered eating is common can contribute to an individual’s unhealthy attitudes about body image and excessive dieting and exercise (Boskind-White & White, 2001). Thus, studying a college student sample targeted a key demographic group among whom disordered eating is extremely prevalent (Striegel-Moore et al., 1990).

Tylka and Subich (2004) used a sample of college women to test a multidimensional model of risk factors for and protective factors against clinical and subclinical levels of eating disorder symptomatology. Tylka and Subich (2004) consulted prior research and observed that the risk factors for and protective factors against disordered eating were grouped into three overarching domains – relational, sociocultural, and personal. A factor was classified as part of the relational domain if it

concerned interactions with significant others or the qualities of these interactions. A sociocultural factor was one that described societal, cultural, or media influences on eating behaviors. A factor was classified as personal if it categorized elements of personality functioning, affective, cognitive, or behavioral characteristics, or the extent to which one endorses or internalizes sociocultural influences (Tylka & Subich, 2004). However, until Tylka and Subich's (2004) study, a model of eating disorder symptomatology that incorporated all three of these domains had not been proposed and tested.

Consequently, in their study, Tylka and Subich (2004) used theoretical frameworks and empirical findings to propose a model of the relationships between the relational variable of social support, the sociocultural variable of pressures for thinness, and the personal variables of internalization of the thin-ideal stereotype, body image disturbance, poor interoceptive awareness, and negative affect, as these variables have been found to have moderate to strong associations with eating disorder symptomatology (Brookings & Wilson, 1994; Grisset & Norvell, 1992; Stice, Nemeroff, & Shaw, 1996; Tylka & Subich, 1999, as cited in Tylka & Subich, 2004). Data were gathered from a sample of 463 predominantly white, female undergraduate student participants, recruited from psychology courses and campus sororities. Structural equation modeling was used to determine that the proposed model fit the data adequately, and the relational, sociocultural, and personal variables all made unique contributions to eating disorder symptomatology (Tylka & Subich, 2004).

Despite making a unique contribution to the variance in disordered eating, the relational variables in Tylka and Subich's (2004) study, social support from family and

social support from friends, were the least robust predictors in the multidimensional model. While these effects were statistically significant, and may have clinical significance, our understanding of the connection between relational factors and disordered eating may be enhanced by the measurement of constructs from theories that provide a richer and more culturally-specific perspective on women's psychological development. More specifically, research generally has measured relationship variables in terms of the more global construct of social support, as compared to measuring more nuanced constructs that are grounded in feminist theory, such as perceived mutuality and self-silencing, which will be defined and discussed. These constructs have been used to articulate key aspects of interpersonal functioning, and a small, but growing, body of research has found that they relate to eating disorder symptomatology, and may provide additional predictive utility (Tantillo & Sanftner, 2010; Wechsler, Riggs, Stabb, & Marshall, 2006).

Feminist scholars and practitioners have clearly articulated the critical role that interpersonal relationships play in improving or impairing the psychological health of girls and women. Additionally, Maine (2010) has argued that the glaring gender disparity in disordered eating requires that we consider the impact of the social construction of gender in order to reach a clearer conceptualization of the etiology, maintenance, and treatment of these symptoms. This is where feminist theory can make a significant contribution to our understanding of eating disorder symptomatology as it goes beyond a purely intrapsychic explanation to consider how social, political, and relational factors shape female psychological development. One specific feminist theory, relational-cultural theory, suggests that growth-fostering relationships are at the core of

human development, especially for women, and that a lack of growth-fostering relationships is a major predictor of psychological distress (Jordan, 2000). Accordingly, relational-cultural theory provided the theoretical framework for the constructs being explored in the current study.

Clinicians who practice psychotherapy from a feminist perspective have written about the importance of considering relational, social, and political factors in the treatment of eating disorders. For instance, Maine (2001) discusses the importance of working from a “relational model based on mutuality, authenticity, and trust” (p. 1309). In addition, Maine (2001) emphasizes the importance of considering issues of dependence and interdependence when conceptualizing and treating women with eating disorders. My own clinical experience in treating adolescent girls and young adult women with eating disorders has provided me with repeated “in vivo” observations that relationships with significant others matter greatly in the etiology, maintenance, and treatment of disordered eating.

Consequently, in the current study, we sought to look at interpersonal relationships from the perspective of relational-cultural theory, which postulates that connection is key to women’s psychological development and well-being across the lifespan. It explored whether the measurement of more nuanced relational constructs, namely, perceived mutuality (e.g., Jordan, Kaplan, Miller, Stiver, & Survey, 1991) and self-silencing (e.g., Jack, 1991) added predictive validity to eating disorder symptomatology, in the context of sociocultural, relational, and personal factors.

In relational-cultural theory, perceived mutuality is conceptualized as a back-and-forth flow of thoughts, feelings, and activity between people in relationship (Genero,



Miller, Surrey, & Baldwin, 1992). Jordan and colleagues (1991) wrote that in an exchange characterized by mutuality,

one is both affecting the other and being affected by the other; one extends oneself out to the other and is also receptive to the impact of the other. There is openness to influence, emotional availability, and a constantly changing pattern of responding to and affecting the other's state. There is both receptivity and active initiative toward the other. (p. 82)

Relationships that are characterized by mutuality have been found to promote growth, increase one's knowledge of self and others, heal feelings of disconnection, and are essential to well-being, especially for girls and women (Maine, 2001). Furthermore, a small body of empirical research suggests that perceived mutuality is also related to eating disorder symptomatology (e.g., Tantillo and Sanftner, 2003; Tantillo and Sanftner, 2010; Sanftner, Tantillo, & Seidlitz, 2004; Wechsler et al., 2006).

Consonant with relational-cultural theory (e.g., Jordan et al., 1991), Jack (1991) has written about the impact of disconnection from others and from the self on mental health, specifying its potential to contribute to depression. She has argued that the establishment of positive, close connections is a primary motivation, especially for women, throughout life. Jack (1991) and a prominent group of other feminist scholars (e.g., Gilligan, 1982, 1988; Maine, 2001; Pipher, 1994) have suggested that women develop specific relational schemas about how to create and maintain close relationships, and these schemas may be highly influenced by cultural values and judgments about who women "should" be to others (e.g., nice, cooperative, pleasing, and self-sacrificing) in order to maintain connection.

Consequently, some women internalize the idea that in order to develop and maintain safe and intimate connections, they must engage in “self-silencing,” or a process of withholding emotions, opinions, strengths, and capabilities perceived to be threatening to the other in order to maintain the relationship (Jack, 1991). Wechsler and colleagues (2006) have argued that self-silencing is similar to the “central relational paradox” described by relational-cultural theorists; specifically, one attempts to preserve connection in non-mutual relationships by paradoxically keeping parts of oneself out of the relationship. Otherwise stated, although the goal of self-silencing is to maintain a sense of intimacy, harmony, and connectedness with others, it actually creates disconnection and inauthenticity because parts of oneself are not known to the other (Jack, 1991, 2011).

A body of research has been established to support the positive association between self-silencing and depression (Cramer, Gallant, & Langlois, 2005; Jack & Dill, 1992; Thomson, 1995; Wechsler, 1999). Specifically, studies have shown that as self-silencing increases, so does depression, and vice versa (Cramer et al., 2005; Jack & Dill, 1992; Wechsler, 2005). In seeking to expand the research on self-silencing and depression, scholars have also theorized about the association between self-silencing and eating disorder symptomatology. Maine (2001) has suggested that the gender disparity inherent in eating disorders calls for consideration of the unique aspects of female psychological development in their etiology, maintenance, and treatment. A burgeoning body of empirical research has begun to support the theoretical associations between self-silencing and eating disorder symptomatology (e.g., Geller, Cockell, & Goldner, 2000; McCann, 1995; Morrison & Sheahan, 2009; Piran & Cormier, 2005; Smolak &

Munstertieger, 2002).

To my knowledge, the current study was the first to explore the relationships between mutuality, self-silencing, and disordered eating within the context of a multidimensional model of sociocultural, personal, and relational risk and protective factors (Tylka & Subich, 2004). This model includes the sociocultural variable of sociocultural pressures for thinness and four personal variables: internalization of the thin ideal stereotype, body dissatisfaction, poor interoceptive awareness, and negative affect. As stated, the feminist literature served as a frame for these constructs as it considers the interaction between contextual and personal factors in women's development. Going beyond intrapsychic factors in understanding the development of psychological symptoms, feminist theory highlights the social, political, and relational factors that influence development, and is especially applicable to adolescent girls and young women who are navigating the process of "finding their voice" within a highly gendered, and sometimes silencing, world (Gilligan, 1982).

Feminist scholars have theorized that sociocultural pressures for thinness contribute significantly to the etiology and maintenance of eating disorder symptomatology among girls and women (e.g., Stice, 1994; Striegel-Moore, Silberstein, & Rodin, 1993). These pressures have been conceptualized as a form of sexual objectification (Pipher, 1994). Sexual objectification is the reduction of a woman to her body or body parts, with the idea that her body or body parts are capable of representing her as a whole and have worth to the extent that they give pleasure to others (Bartky, 1990). According to objectification theory, experiences with sexual objectification from others can lead women to objectify themselves (e.g., "self-objectify"), through the process of

internalization, and to equate their self-worth with their appearance (Fredrickson & Roberts, 1997). Empirical research has established an association between sociocultural pressures for thinness and eating disorder symptomatology (Stice, et al., 1996).

When sexual objectification takes on the specific form of appraising women's bodies and their worth in terms of *weight and shape*, girls and women may internalize the dominant cultural stereotype of the "thin-ideal" (Fredrickson & Roberts, 1997). Internalization of the thin ideal stereotype represents a personal risk factor for eating disorder symptomatology (Tylka & Subich, 2004). Empirical research has found that internalization of the thin ideal stereotype is related to eating disorder symptomatology among college women (Heinberg, Thompson, & Stormer, 1995; Stice, Ziemba, Margolis, & Flick, 1996). Furthermore, sociocultural pressures for thinness are also problematic because the idealized standard of thinness that they portray is impossible for most women to attain (Maine, 2010; Stice, Ziemba et al., 1996). When girls and women are unable to attain these unrealistic weight standards, they may experience negative feelings, especially shame, toward their bodies, and these feelings can contribute to body image disturbance (Fredrickson & Roberts, 1997; Maine, 2010). Body image disturbance has been defined as encompassing body dissatisfaction, body shame, and preoccupation with size and shape, and represents a personal risk factor for disordered eating (Tylka & Subich, 2004). Research has established a clear and robust connection between body image disturbance and eating disorder symptomatology (Cattarin & Thompson, 1994; Phelps, Johnston, & Augustyniak, 1999).

Body image disturbance has also been associated with a third personal factor – poor interoceptive awareness (Muehlenkamp & Saris-Baglama, 2002). Poor

interoceptive awareness is a difficulty with identifying one's bodily sensations, whether they be emotional sensations or sensations of hunger and satiety (Lerner, 1993; Tylka & Subich, 2004). Looking again toward objectification theory, Fredrickson and Roberts (1997) found that girls and women may suppress their hunger cues, and subsequently, other internal sensations (e.g., emotions), in an effort to lose weight and decrease their body dissatisfaction. Indeed, research has found that poor body image predicts poor interoceptive awareness, which in turn predicts eating disorder symptomatology in a sample of college women (Muehlenkamp & Saris-Baglama, 2002; Noll & Fredrickson, 1998; Tylka & Subich, 2004). Furthermore, Fredrickson and Roberts (1997) suggest that when girls and women internalize the thin ideal stereotype (e.g., self-objectify) as a result of sociocultural pressures for thinness (e.g., one form of sexual objectification), and believe that their self-worth is inextricably tied to their appearance, they are likely to experience lower levels of self-esteem and higher levels of negative affect when they are unable to attain the thinness ideal (Fredrickson & Roberts, 1997). Negative affect, or the experience of a generalized negative mood state, is the fourth and final personal variable to be included in the multidimensional model (Watson, Suls, & Haig, 2002). Consonant with this theoretical proposition, empirical researchers have found that pressure for thinness directly predicts negative affect (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

In summary, in the present study, Tylka and Subich's (2004) empirically-tested multidimensional model of risk factors for and protective factors against eating disorder symptomatology served as the empirical framework that was augmented by feminist theory. Here, it is important to note that while the model provided a framework for the

variables included in the current study, we did not seek to re-test the model, and instead conducted a series of regression analyses to investigate the current study's hypotheses and research questions. As reviewed above, this multidimensional model provides empirical support for the importance of a combination of relational, sociocultural, and personal factors in predicting disordered eating. In order to enhance the measurement of relational factors, the current study explored, from the perspective of feminist relational theory, whether two more nuanced variables, namely, perceived mutuality and self-silencing, explained additional and unique variance in the prediction of eating disorder symptomatology, while also accounting for the variance explained by the sociocultural, personal, relational factors included in Tylka and Subich's (2004) model.

## **CHAPTER TWO**

### **Review of the Literature**

This review of the literature is organized into five main sections. In the first section, I summarize the diagnostic criteria and prevalence rates of full syndrome and partial syndrome disordered eating symptoms. I highlight the implications of research studies that conceptualize eating disorder symptomatology on a continuum, rather than considering clinical and subclinical eating disorder symptoms as quantitatively distinct. Next, I discuss the psychological comorbidities and physical sequelae of eating disorder symptomatology, and the impact of eating disorder symptomatology on quality of life and well-being, in both the short-term and long-term. In the second section, I summarize the literature on the intersection between developmental milestones and eating disorder symptomatology. I focus on the proposed underpinnings for why eating disorder symptomatology often begins during adolescence and young adulthood for the vast majority of sufferers. Next, I review the theoretical and empirical literature on the college experience, and discuss why the transition to college and cultural milieu of college can be significant environmental risk factors for eating disorder symptomatology, and thus, why college students are a key population of interest for research.

In the third section of the literature review, I discuss a multidimensional model of risk factors for and protective factors against eating disturbances. Specifically, I present the multidimensional model of eating disorder symptomatology and discuss the three domains into which risk and protective factors have been organized: relational, sociocultural, and personal correlates. Next, I discuss relational correlates as a key component of the multidimensional model. I introduce relational-cultural theory and

argue for the construct of mutuality as a key protective factor in the relational domain of the model. Then, I present the construct of self-silencing and outline its theoretical and empirically supported association with disordered eating. Finally, I present the sociocultural and personal correlates of disordered eating. I begin by introducing objectification theory. Then, I discuss the construct of sociocultural pressures for thinness and present the empirical evidence to support it as a key risk factor within the sociocultural domain. Lastly, I discuss the personal correlates that confer risk for eating disturbance, and outline the theory and empirical research that support their inclusion in the multidimensional model.

### **Eating Disorder Diagnostic Criteria and Prevalence Rates**

Eating disorder symptomatology exists on a spectrum (Hotelling, 2001; Tylka & Subich, 2004). On one end of the spectrum are individuals who meet the criteria for full syndrome eating disorder diagnoses, such as Anorexia Nervosa (AN) and Bulimia Nervosa (BN) (*Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition*, APA, 2013 Mulholland & Mintz, 2001). On the other end of the spectrum are individuals who engage in unhealthy eating and weight management practices that are below the clinical threshold, but still qualify as maladaptive or problematic (Tylka & Subich, 2004).

This section will review the diagnostic criteria and prevalence rates for AN and BN, and will briefly introduce the new eating disorder diagnoses put forth in the 5<sup>th</sup> edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013). It will also discuss the prevalence rates of eating disorder symptomatology below full syndrome diagnostic criteria. Although the disordered eating habits of most of the college women who will be sampled for the current study will likely fall below clinical levels, an



understanding of the diagnostic criteria is still valuable as a small subset of participants may meet the clinical threshold. Finally, as the majority of research and scholarship on eating disorders historically has focused on the experiences of girls and women, and since the current study will sample from a population of college-aged women, this literature review will present the diagnostic criteria and prevalence rates for females only.

**Anorexia Nervosa.** As stated by the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013), the essential features of Anorexia Nervosa (AN) are the refusal to maintain a minimally normal body weight, an intense fear of weight gain, and a significant disturbance in the perception of one's body shape or size. The methods of weight loss and management vary by individual. For instance, some girls and women accomplish their weight loss primarily through extreme dieting, fasting, or excessive exercise, and are diagnosed as having the "Restricting type" of AN (APA, 2013). In addition to meeting the criteria for AN through restricting and/or over-exercising, some girls and women with AN also regularly engage in binge eating and/or purging and are diagnosed as having the "Binge-eating/purging type" of AN (APA, 2013). Binge eating is defined as eating in a discrete period of time, usually less than two hours, an amount of food that is definitely larger than most individuals would eat under similar circumstances (APA, 2013). Purging can be accomplished through self-induced vomiting, or the misuse of laxatives, diuretics, or enemas (APA, 2013).

In terms of prevalence, about 1% of the female population meet the diagnostic criteria for full syndrome Anorexia Nervosa (Tylka & Subich, 2004). The onset of the disorder is typically during adolescence, and can be triggered by a stressful life event such as being bullied or coping with a family crisis (APA, 2013). In clinical samples, the

duration of AN is highly variable as some individuals exhibit weight restoration and a marked decrease in psychological symptoms after one episode, while others experience relapses or steady deterioration in their condition. If the disorder persists for more than five years, individuals often begin to exhibit binge eating, and some require a change in diagnosis to Bulimia Nervosa (APA, 2013).

A new diagnosis similar to that of Anorexia Nervosa is Avoidant/Restrictive Food Intake Disorder. As stated by the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013), the essential feature of this disorder is an eating or feeding disturbance as manifested by failure to meet appropriate nutritional and energy needs associated with one or more of the following: (1) significant weight loss (or failure to achieve expected weight gain/faltering growth in children); (2) significant nutritional deficiency; (3) dependence on enteral feeding or oral nutritional supplements; and/or (4) marked interference with psychosocial functioning. Furthermore, the disturbance cannot be better described by an unavailability of food or culturally sanctioned practices, does not occur exclusively during a course of Anorexia Nervosa or Bulimia Nervosa, and is not attributable to a concurrent medical condition or mental disorder (APA, 2013).

**Bulimia Nervosa.** As presented in the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013), the key features of Bulimia Nervosa (BN) include recurrent episodes of binge eating (the rapid consumption of high-calorie foods occurring in secret as the individual often feels ashamed of the behavior), a sense of lack of control over eating, inappropriate compensatory behaviors to prevent weight gain, and the excessive influence of body weight and shape on one's self-evaluation and identity (APA, 2013). Binge eating and inappropriate compensatory behaviors must occur, on

average, at least once per week for 3 months. These episodes are often triggered by feelings of dysphoria, interpersonal stressors, extreme hunger following food restriction, or negative affect about body weight, shape, and/or food (APA, 2013). Individuals who engage in binge eating without the recurrent use of inappropriate compensatory behaviors as in BN, can be diagnosed with Binge Eating Disorder (APA, 2013).

In terms of prevalence, about 1% to 3% of the female population meet the criteria for BN (APA, 2000; Tylka & Subich, 2004). The disorder usually begins in late adolescence and early adulthood, slightly later than the typical age of onset for Anorexia Nervosa, and sometimes coincides with or follows a period of restricting calories (APA, 2013). The course of BN can be chronic or intermittent, with periods of remission and reoccurrence. The typical duration of the disorder is several years in clinical samples, but most individuals experience at least a reduction in symptoms, if not full recovery, over time (APA, 2013).

**Other Specified Feeding or Eating Disorder.** A diagnosis of Other Specified Feeding or Eating Disorder is given to individuals who do not meet the full criteria for Anorexia Nervosa or Bulimia Nervosa (APA, 2013). The specific diagnostic criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013) include the following: (1) Atypical Anorexia Nervosa – for females, 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; (2) Bulimia Nervosa (of low frequency and/or limited duration) - all of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory behaviors occur, on average, at a frequency of less than once a week and/or for less than three months; (3) Binge-Eating Disorder (of low frequency

and/or limited duration - all the criteria for Binge-Eating Disorder are met, except that the binge-eating occurs , on average, less than once a week and/or for less than 3 months; (4) Purging Disorder – recurrent purging behavior to influence weight or shape in the absence of binge eating; (5) Night Eating Syndrome – recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. Finally, clinicians may use a diagnosis of Unspecified Feeding or Eating Disorder for individuals who present with symptoms characteristic of an eating or feeding disorder that cause clinical levels of distress or impairment, but do not meet the full criteria for any of the disorders listed above.

**Sub-threshold eating disorder symptomatology.** Although the prevalence of full-syndrome eating disorders is relatively small (e.g., between 1% and 3% of the population are diagnosed with Anorexia Nervosa or Bulimia Nervosa), many women (e.g., 19% to 32%; Mulholland & Mintz, 2001) suffer from *some* eating disorder symptoms that cause distress or impairment within the subclinical range. In fact, Chamay-Weber and colleagues (2005) have referred to the use of unhealthy weight control behaviors by adolescents as an “epidemic” in Western countries, as research shows that eating disorders are the third most prevalent chronic illness among adolescents (Fisher et al., 1995). For instance, one study showed that, at any given time, two-thirds of 14- to 18-year-old girls are on a diet (Rosen, Compas, & Tacy, 1993). In the presence of other risk factors, dieting is one of the most robust predictors of spiraling into full-syndrome eating disorders, through pathways of lowered self-esteem and more severe dieting (Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999).

In addition, although exact prevalence rates vary, studies have shown that adolescents and college-age women have notably high rates of body dissatisfaction, dieting, and problematic eating (Heatherton et al., 1997). Franko and Omori (1999) studied the severity of disturbed eating and its psychological correlates in a sample of 207 female, first-year college students. Half of their participants were classified as “non-dieters” while 23% were considered “intensive dieters,” 17% were “casual dieters,” and 9% were “probable bulimics/dieters at-risk.” In addition, the psychological correlates of depression, dysfunctional thinking, and disturbed eating attitudes followed an orderly decreasing pattern across declining levels of eating pathology severity. The researchers suggested that their results collectively offered support for the continuity hypothesis of eating disorders which states that clinical and subclinical levels of eating disorders differ only by degree, and are not quantitatively different (Franko & Omori, 1999). In another study of female, first-year college students, 50% of respondents endorsed that they participated in binge eating, and 80% reported being on a diet (Striegel-Moore et al., 1990).

Looking at the eating behaviors of students across the college experience, a study by Mintz and Betz (1988) found that 61% of college women reported that they “occasionally” or “regularly” used extreme measures to control their weight. Participants’ behaviors included fasting, appetite suppressants, diuretics, or purging after eating (Mint & Betz, 1988). In a similar study which asked 166 high school girls and college-aged women to report the behaviors they use to control their weight, the following were endorsed: frequently skip meals (59%), eating fewer than 1,200 calories per day (36%), eliminating fats (30%), eliminating carbohydrates (26%), fasting for more

than 24 hours (25%), using laxatives (7%), using diuretics (6%), and vomiting after eating (4%) (Tylka & Subich, 2002).

**Psychological comorbidities.** Across the spectrum of severity, girls and women with eating disorder symptomatology commonly experience psychological comorbidities and a significant impairment in their quality of life and functioning across various domains (Tylka & Subich, 2004). Research suggests that individuals with partial and full eating disturbances share similar psychological characteristics and comorbidities (Dancyger & Garfinkel, 1995). For instance, issues with mood, such as dysthymia, depression, anxiety, and obsessive-compulsive disorder, are common (Lewinsohn et al., 2000). Research and clinical accounts also suggests that women with eating disorder symptomatology also present with suicidal ideation and/or attempts, self-injury, and substance abuse (Devaud et al., 1998; Lewinsohn et al., 2000). Furthermore, Axis II disorders such as borderline personality disorder, along with highly perfectionistic and impulsive personalities, have been documented in this population of women (Grilo, 2002; Lewinsohn et al., 2000). In their transdiagnostic model of eating disorders, Fairburn and colleagues (2003) argued that the clinical features of core low self-esteem, clinical perfectionism, mood intolerance, and interpersonal difficulties are common across eating disorder diagnoses, and often serve as maintaining mechanisms for eating disorder symptomatology. Collectively, all of these findings suggest that psychological comorbidities among individuals with partial and full syndrome eating disorders are common, are sometimes severe, and can interact with and maintain problematic eating.

In addition to investigating the psychological comorbidities of individuals with eating disorder symptomatology, researchers have explored subjective well-being with

this population. For instance, Kitsantas and colleagues (2003) explored the subjective well-being of three groups of college women – those with full syndrome eating disorders, those at-risk for eating disorder symptomatology, and those without eating disorder symptoms. They found that participants with eating disorders reported lower levels of life satisfaction and positive affect, and higher levels of negative affect, as compared with the other two groups. Furthermore, participants who were considered at-risk for eating disorders reported higher levels of negative affect as compared to participants who were not considered at risk.

Engel and colleagues (2009) reviewed and summarized the findings from 27 articles on the negative impact of eating disorder symptomatology on health-related quality of life. Across the articles they reviewed, the researchers found that considerable levels of impairment were present in the health-related quality of life of individuals with both clinical and subclinical eating disturbances, and with their caregivers. Furthermore, Padierna and colleagues (2000) studied the impact of eating disorders on daily functioning in areas of life not directly related to the eating disorder. Participants were 197 women who were receiving outpatient therapy at an eating disorders clinic. As compared to women in the general population, the patients with eating disorders perceived more dysfunction in all areas measured by the SF-36, a multi-purpose, short form health survey (e.g., physical functioning, bodily pain, general health, vitality, social functioning, and mental health).

Heatherton and colleagues (1997) conducted a 10-year longitudinal study to assess for stability and change of eating attitudes and behaviors during the transition to adulthood in a sample of over 500 college women. While the results showed an overall

decline in disordered eating over the course of 10 years, body dissatisfaction and the desire to lose weight remained high among participants. Moreover, of the participants who met the clinical criteria for an eating disorder during college, one in five still met the criteria 10 years later. This finding suggests that women who met the diagnostic criteria for an eating disorder in college were the most at risk for protracted eating disorder symptomatology during later adulthood, as compared to participants who fell below the diagnostic criteria. Collectively, Heatherton and colleagues' (1997) work alerts us to the long-term consequences that are possible for women who experience some level of eating disorder symptomatology during the college years.

**Physical sequelae.** In addition to the short- and long-term psychological consequences of eating disorder symptomatology are the physical consequences. The physical consequences and medical complications have been documented at both the clinical and subclinical levels (Chamay-Weber et al., 2005). Girls and women with full and partial syndrome eating disorders commonly suffer from fatigue, headaches, lightheadedness, and cold arms and legs (Rome & Ammerman, 2003). Some experience cardiovascular symptoms such as hypotension, bradycardia, and irregular heartbeat (Chamay-Weber et al., 2005; Rome & Ammerman, 2003). Up to three-quarters of girls and women with eating disorder symptomatology experience gastrointestinal complaints, including symptoms of chronic constipation, dyspepsia, regurgitation, nausea, and abdominal pain (Fisher et al., 1995; Rome & Ammerman, 2003). Others experience osteopenia, or decreased bone density, which results in an increased risk of fracture and osteoporosis (Bachrach et al., 1990). Finally, menstrual abnormalities such as irregular periods and amenorrhea are commonly reported in over 90% of pubertal women with



clinical and subclinical eating disorder symptoms (Kreipe, Strauss, Hodgman, & Ryan, 1989). Research has shown that menstrual abnormalities can have a long-term impact on fertility (Kreipe et al., 1989).

As is evident from this review, there is a significant prevalence of eating disorder symptomatology, when both subclinical and clinical levels are taken into account, and the psychological and physical consequences are often impairing and sometimes long-term. With these considerations in mind, recent research has highlighted the importance of measuring eating disorder symptomatology along a continuum to better understand the etiology, assessment, and treatment of both clinical and subclinical eating disorders in girls and women, especially since relatively little information is available on the experiences of women who do not meet full diagnostic criteria (Kashubeck-West & Mintz, 2001). Studies that sample from community samples as compared to clinical samples of women may be able to access and address a greater range of eating disorder symptomatology (Kashubeck-West & Mintz, 2001). Recruiting participants from a community sample also has the additional advantage of allowing for greater diversity in the research sample as societal barriers sometimes preclude ethnically diverse individuals from accessing treatment services (Striegel-Moore & Cachelin, 2001). Consequently, the current study recruited from a diverse community sample of college students in an attempt to include participants with a range of eating disturbances, thus addressing a significant gap in the literature to date.

### **Developmental Milestones and Disordered Eating**

**Adolescent and young adult development.** The development of eating disturbances can be traced to physical, psychological, environmental risk factors experienced at an

early age (Vohs, Heatherton, & Herrin, 2001). When observed during early adolescence, psychological factors such as high levels of negative emotionality and body dissatisfaction, physical factors such as early age of menarche, and environmental factors such as being bullied predict disordered eating in later adolescence and young adulthood (Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Leon, Fulkerson, Perry, & Early-Zald, 1995). These factors load the proverbial “gun” and place girls at greater risk for the development of disordered eating.

In the presence of these risk factors, research has uncovered key psychological and physical stressors that appear to “pull the trigger” on the loaded gun. Maine (2001) suggests that the experience of developmental milestones and transitions often acts as a psychological trigger. These milestones (e.g., entering puberty, beginning to date, transitioning to college) may set up disordered eating patterns because they may require changes in the individual’s personality, cognitions, and relational structure, in the context of shifting cultural expectations and social roles, and these changes can be highly stressful (Maine, 2001). Adolescents and young adults vary considerably in their ability to cope with the changes inherent in “normal” developmental milestones and transitions (Smolak & Levine, 1996). Some individuals can access a wellspring of internal resources, such as high levels of self-efficacy, or lean on supportive and responsive others to navigate hardships (Smolak & Levine, 1996). Those individuals whose internal resources and social supports are less robust are vulnerable to experiencing mental health issues (e.g., depression and anxiety), especially in the midst of change (Dumont & Provost, 1999).

Furthermore, as Maine (2001) suggests, shifting cultural expectations accompany the developmental transition into adolescence and young adulthood. Specifically, traditional models of psychosocial development, especially within Western cultures, suggest that successfully resolving the separation-individuation process and becoming independent is the ultimate goal of maturation at this developmental stage (Erikson, 1968). However, more recent models of the development of girls and women suggest that relationships are also key to psychological health, and learning to develop healthy interdependence is a core developmental goal (Jordan, 1986; Jordan et al., 1991). Since traditional models usually prevail, adolescent girls in Western cultures often receive the message that their relational orientation is a sign of dependence and weakness, rather than a sign of connectedness and psychological health, and they may abandon their needs to fit in with social role expectations of complete autonomy and independence (Jack, 2011). This process can result in adolescent girls and young women feeling disempowered, and disconnected from both themselves and others.

**College experience.** The transition to college and the college experience itself can also trigger eating disturbances among young women. As noted above, in the presence of psychological, physical, and developmental risk factors, certain environments or cultural climates can heighten the risk for disordered eating, and college can be one such environment (Vohs et al., 2001). One reason that college can represent an environmental risk factor for the development or intensification of disordered eating patterns is because of the high prevalence of eating disorders in college settings (Compas et al., 1986; Fairburn & Beglin, 1990; Hesse-Biber et al., 2006). Being within an environment in which disordered eating is common has been found to contribute to an

individual's unhealthy attitudes about body image and excessive dieting and exercise (Boskind-White & White, 2001). Additionally, Compas and colleagues (1986) describe the "cultural milieu" of college as a significant environmental risk factor. Considered part of the "cultural milieu" of college are the following often stressful experiences: relocating geographically for college; losing proximal social support networks; being exposed, sometimes for the first time, to an atmosphere of high achievement and high stress levels; experiencing an increase in negative life events; and undergoing changes in one's roles and identities (Compas et al., 1986; Rosen et al., 1993; Striegel-Moore et al., 1986).

These stressful college experiences often stir up intense emotions, and difficulty coping with intense emotions has been positively associated with dieting, sometimes as a means of gaining a sense of control in the midst of disorganizing or confusing affect (Rosen et al., 1993). Studies have shown that dieting is a statistically significant gateway to disordered eating (e.g., Patton, Selzer, Coffey, Carlin, & Wolfe, 1999). For instance, in a population-based cohort study of adolescents over three years, Patton and colleagues (1999) found that girls who dieted at a severe level had a one in five chance of developing a full syndrome eating disorder, and were 18 times more likely to develop an eating disorder within six months than those who did not diet at all. Furthermore, research has shown that dieting is not an effective means of weight management. Studies have shown that adolescents who diet are more likely to gain weight in the long-term, and ultimately weigh more, than adolescents who never dieted, thus contributing to an ongoing cycle of dieting and disordered eating (e.g., Haines & Neumark-Sztainer, 2006). It is important to explore the cycle of dieting and disordered eating in college students as

research has documented that many women perceive dieting as less important once they have gained some geographical and emotional distance from the unique stressors inherent in the college experience (Heatherton et al., 1997).

In summary, research has demonstrated that physical, psychological, and environmental factors, often expressed at an early age, can set the stage for one's vulnerability to disordered eating (Vohs, Heatherton, & Herrin, 2001). In the presence of these risk factors, studies indicate that developmental milestones and major transitions during adolescence and young adulthood can trigger eating disorder symptomatology as these changes may bring about a shift in the individual's cognitive and relational structure, and these changes can be highly stressful (Maine, 2001; Smolak & Levine, 1996). Environmental changes such as shifting cultural expectations and social roles often accompany these developmental transitions and may confer risk (Maine, 2001). For instance, the "cultural milieu" of the college experience represents a specific set of environmental stressors. Since disordered eating is experienced by an alarming number of college students, a multidimensional understanding of their experience is critical.

### **Multidimensional Model of Disordered Eating Symptomatology**

In the following sections of the literature review, I discuss the components of a multidimensional model of eating disorder symptomatology. Tylka and Subich (2004) observed that the risk factors for and protective factors against eating disorder symptomatology were grouped into three overarching domains – relational, sociocultural, and personal. A factor was classified as part of the relational domain if it concerned interactions with significant others or the qualities of these interactions. A sociocultural factor was one that described societal, cultural, or media influences of eating behaviors.

A factor was classified as personal if it categorized elements of personality functioning, affective, cognitive, or behavioral characteristics, or the extent to which one endorses or internalizes sociocultural influences (Tylka & Subich, 2004). However, until Tylka and Subich's (2004) study, a model of eating disorder symptomatology that incorporated all three of these domains had not been proposed and tested.

Consequently, in their study, Tylka and Subich (2004) proposed and validated a model of disordered eating that accounted for the associations between the relational variable of social support, the sociocultural variable of pressures for thinness, and the personal variables of internalization of the thin-ideal stereotype, body image disturbance, poor interoceptive awareness, and negative affect, as these variables have been found to have moderate to strong associations with eating disorder symptomatology (Brookings & Wilson, 1994; Grisset & Norvell, 1992; Pike, 1995; Stice, Nemeroff, & Shaw, 1996; Tylka & Subich, 1999, as cited in Tylka & Subich, 2004). Data were gathered from a sample of 463 predominantly white, female undergraduate student participants, recruited from psychology courses and campus sororities on a single campus. Structural equation modeling was used to determine that the proposed model fit the data adequately, and the relational, sociocultural, and personal variables all made unique contributions to eating disorder symptomatology (Tylka & Subich, 2004).

Despite making a unique contribution to the variance in disordered eating, the relational variables in Tylka and Subich's (2004) study, social support from family and social support from friends, were the least robust predictors in the multidimensional model. While these effects were statistically significant, and may have clinical significance, our understanding of the connection between relational factors and

disordered eating may be enhanced by the measurement of constructs from theories that provide a richer and more culturally-specific perspective on women's psychological development. More specifically, research generally has measured relationship variables in terms of the more global construct of social support, as compared to measuring more nuanced constructs that are grounded in feminist theory, such as perceived mutuality and self-silencing, which will be defined and discussed. These constructs have been used to articulate key aspects of interpersonal functioning, and a small, but growing, body of research has found that they relate to eating disorder symptomatology, and may provide additional predictive utility above and beyond social support (Tantillo & Sanftner, 2010; Wechsler, Riggs, Stabb, & Marshall, 2006).

Feminist scholars and practitioners have clearly articulated the critical role that interpersonal relationships play in improving or impairing the psychological health of girls and women including disordered eating symptomatology. Maine (2010) has argued that the glaring gender disparity in disordered eating requires that we consider the impact of the social construction of gender in order to reach a clearer conceptualization of the etiology, maintenance, and treatment of these symptoms. This is where feminist theory makes a significant contribution to our understanding of eating disorder symptomatology as it goes beyond a purely intrapsychic explanation to consider how social, political, and relational factors shape female psychological development. One specific feminist theory, relational-cultural theory, suggests that growth-fostering relationships are at the core of human development, especially for women, and that a lack of growth-fostering relationships is a major predictor of psychological distress (Jordan, 2000). Accordingly, relational-cultural theory will augment the multidimensional model and provide the

theoretical framework for the constructs being included in the current study – perceived mutuality and self-silencing.

In addition, clinicians who practice psychotherapy from a feminist perspective have written about the importance of considering relational, social, and political factors in the treatment of eating disorders. For instance, Maine (2001) discusses the importance of working from a “relational model based on mutuality, authenticity, and trust” (p. 1309). Maine (2001) also emphasizes the importance of considering issues of dependence and interdependence when conceptualizing and treating women with eating disorders. In writing about her work with “Anna,” a woman whom she treated for Anorexia Nervosa, Maine (2001) writes the following about the relational elements that were addressed in therapy:

Anna addressed many conflicts with her family and had a much greater appreciation for how the role she assumed after her parents’ divorce had affected her. She was able to set better boundaries with her mother while remaining close to her, and she was finding more of a balance between dependence and independence. She had reconnected with her father and dealt with the guilt that this might hurt her mother. She also felt more connected to her brothers and to her friends and continued to be close to her grandparents. The fact that she had developed other authentic relationships helped her to prepare for the decline and anticipated loss of her grandparents (p. 1309).

My clinical experience in treating adolescent girls and young adult women with eating disorders has provided me with considerable “in vivo” evidence that relationships with significant others matter greatly in the etiology, maintenance, and treatment of



disordered eating.

Research generally has measured relationship variables in terms of the more global construct of social support as compared to measuring a more specific relational construct from the feminist literature, such as perceived mutuality and self-silencing. According to the feminist theoretical literature, these constructs articulate key aspects of interpersonal functioning, and a small, but growing, body of research has begun to relate them to eating disorder symptomatology (Tantillo & Sanftner, 2010; Wechsler et al., 2006). For example, Wechsler and colleagues (2006) found that higher levels of perceived mutuality and lower levels of self-silencing were related to lower levels of eating disorder symptomatology. Consequently, in the current study, we sought to look at interpersonal relationships from the perspective of relational-cultural theory, which focuses on perceived mutuality and the role of one's "voice" within the context of relationships.

The first key construct, perceived mutuality, is defined as a back-and-forth flow of thoughts, feelings, and activity between people in relationship (Genero et al., 1992). Relationships in which perceived mutuality is present are characterized by receptivity, openness to influence, and emotional availability (Jordan et al., 1991). Furthermore, one's own experience is affirmed and validated, and paradoxically, the individual feels less separate and more authentically connected (Jordan et al., 1991). The second key construct, self-silencing, is defined as an active process of withholding emotions, opinions, strengths, and capabilities perceived to be threatening to the other in order to maintain the relationship (Jack, 1991, 1999). Wechsler and colleagues (2006) have argued that self-silencing is similar to the "central relational paradox" described by relational-cultural theorists; specifically, one attempts to preserve connection in a non-

mutual relationship by paradoxically keeping parts of oneself out of the relationship. The current study will explore whether the measurement of these more nuanced relational constructs adds predictive validity to eating disorder symptomatology, over and above social support, and in the context of sociocultural and personal factors.

In the section of the literature review that follows, I focus on the relational component of Tylka and Subich's (2004) model. I begin by briefly summarizing the social support literature, and then I introduce relational cultural theory. Next, I present the construct of perceived mutuality as a key protective factor against eating disorder symptomatology and the construct of self-silencing as a key risk factor. After my review of the relational factors, I summarize the literature on the other two components of the multidimensional model of disordered eating, namely the sociocultural and personal factors.

### **Relational Factors**

**Social support.** Researchers have explored the relationship between social support and eating disorder symptomatology (e.g., Grisset & Norvell, 1992; Tiller, Sloane, Schmidt, & Troop, 1997). According to coping theory, higher levels of social support may lead to decreased engagement in problematic behavior (e.g., disordered eating), or may indirectly decrease participation in problematic behaviors by increasing the perception of self-worth and decreasing negative affect (Ayers, Sandler, & Twohey, 1998). Empirical evidence suggests that social support and disordered eating are correlated; specifically, lower levels of social support in a sample of college women was correlated with higher levels of disordered eating ( $r = -.21, p < .01$ ) (Hirsh, 1999). Additionally, Goodrick and colleagues (1999) explored whether statistically significant

changes in self-concept, eating control self-efficacy, and social support following group therapy for women with binge eating disorder were associated with disordered eating habits. Results indicated that, of the three independent variables, social support and disordered eating habits demonstrated the weakest correlation ( $r = -.29, p < .001$ ), while the effect sizes of the other correlations were large (Goodrick et al., 1999). Furthermore, in a sample of adolescent girls and young adults who had been diagnosed with an eating disorder, the correlation between eating disorder symptoms and social support from friends was small ( $r = -.23, p < .05$ ), and the correlation between eating disorder symptoms and social support from family was also small ( $r = -.23, p < .05$ ) (Fitzsimmons & Bardone-Cone, 2011).

These studies generally have measured relationship variables in terms of the more global construct of social support, as compared to measuring richer and more culturally-nuanced aspects of interpersonal functioning, as discussed in the feminist literature. Thus, the small effect sizes of the correlations may be a function of measurement issues versus conceptual issues. To address this issue, we sought look at interpersonal relationships from the perspective of relational-cultural theory, which focuses on empathic responsiveness and authentic connection as key components in healthy relationships. The inclusion of relational-cultural constructs, in addition to the more global and gender-neutral construct of social support, contribute an enhanced theoretical basis, specific to women's development, to our understanding of eating disorder symptomatology.

**Relational-cultural theory.** Relational-cultural theory, borne out of collaborative scholarship at the Wellesley College Stone Center, has been posited as a feminist model

through which to conceptualize the psychosocial development of girls and women (Jordan et al., 1991; Miller & Stiver, 1997). Traditional models of psychosocial development, especially within the Western cultural tradition, suggest that the separation-individuation process is the ultimate goal of maturation and is essential to mental health (e.g., Blos, 1962; Erikson, 1968). However, feminist scholars such as Gilligan (1988) and Jordan and colleagues (1991), have argued that the processes involved in the course of separation-individuation (e.g., weakening of early emotional ties, solidifying boundaries between people) do not fit for adolescent girls and women (or for people in general) and can cause significant distress.

Instead, relational-cultural theory suggests that the goal of women's development is developing growth-fostering connections through the process of differentiation (Jordan et al., 1991). Different than the separation-individuation process, differentiation is described as a process that encompasses increasing levels of complexity, fluidity, and articulation within relationships (Jordan et al., 1991) and involves the renegotiation and reframing of relationships in light of newfound capacities (Gilligan, 1988). Jordan and colleagues (1991) argued that gaining maturity does not imply weakening emotional connections with others, but *growing within those connections*. Greenberg and Johnson (1988) have stated that interdependence, not independence, within which adolescent girls and women are able to develop a sense of themselves as simultaneously connected and differentiated may be the "true sign of optimal development" (p. 18-19).

Furthermore, it is the *quality* of these connections that matters, and there is an extensive body of empirical literature to support the idea that the quality, not quantity, of relationships is critical to psychological health (Bryant, 1985; Fiore, Becker, & Coppel,

1983; Liang, Tracy, Taylor, Williams, Jordan, & Miller, 2002). Focusing on the quality and nature of relationships, relational-cultural theorists have identified, through clinical data and empirical research, four major growth-fostering characteristics of relationships: mutuality, authenticity, empowerment/zest, and the ability to deal with difference or conflict (Miller & Stiver, 1997). As relationships are critical to psychological health, relational-cultural theory postulates that disconnection, especially chronic disconnection in relationships, is at the core of psychological distress (Tantillo & Sanftner, 2010).

Even before relational-cultural theory was formally articulated, empirical evidence had accumulated to support the importance of growth-fostering relationships. For instance, studies have found that relationships characterized by engagement, closeness, and empathy are associated with higher level of self-esteem, self-actualization, cooperation, vitality, relationship satisfaction, and validation, and lower levels of depression, stress, and interpersonal distress (Beeber, 1998; Burnett & Demnar, 1996; Shulman & Knafo, 1997). The construct of authenticity has been associated with being liked, liking others, and feeling motivated in relationships (Kay & Christophel, 1995). Empowerment has been found to influence positive affect, meaningful activity, and creativity (Hall & Nelson, 1996; Spreitzer, 1995). Furthermore, the ability to deal with difference or conflict is related to higher self-esteem, lower levels of depression and anxiety, and improved internal locus of control (Kashani, Burbach, & Rosenberg, 1988; Zhang, 1994). Overall, growth-promoting relationships are associated with increased self-disclosure in relationships, higher levels of emotional resiliency, and enhanced coping strategies (Genero et al., 1992; Jordan et al., 1991).

**Mutuality.** The current study focused on one of the most central components of

relational-cultural theory – *perceived mutuality*. Perceived mutuality is conceptualized as a back-and-forth flow of thoughts, feelings, and activity between people in relationship (Genero et al., 1992). Jordan and colleagues (1991) wrote that in an exchange characterized by mutuality,

one is both affecting the other and being affected by the other; one extends oneself out to the other and is also receptive to the impact of the other. There is openness to influence, emotional availability, and a constantly changing pattern of responding to and affecting the other's state. There is both receptivity and active initiative toward the other. (p. 82)

Furthermore, in the presence of perceived mutuality, one's own experience is affirmed and validated, and paradoxically, the individual feels less separate and more authentically connected and related (Jordan, 1995). As Miller and Stiver (1997) suggest, our emotional experience often is complicated, and we often are less clear about our feelings “until we have the chance to engage with another person who can resonate with them” (p. 27).

Perceived mutuality is important to study in the context of disordered eating because disconnection from others has been shown to result in a disconnection from one's own emotional, psychological, and physical needs, especially for women, and this disconnection from self can result in body dissatisfaction and disordered eating symptoms (Maine, 2001). A small body of empirical research has begun to substantiate the connections between higher levels of perceived mutuality and lower levels of eating disorder symptomatology (e.g., Tantillo & Sanftner, 2010; Tantillo & Sanftner, 2003).

Interactions within which perceived mutuality is present are theorized to lead to the "five good things," or five relational outcomes for both participants in the interaction.

These five outcomes are: (1) an increased sense of self-worth for both participants; (2) an increased ability and sense of empowerment to engage in activities that help oneself and others; (3) knowledge and clarity about the thoughts, feelings, and needs of oneself and the other; (4) increased feelings of vitality, energy, or zest for life; and (5) an increased desire to engage in mutual exchanges with others (Miller & Stiver, 1997). However, as Jordan (2008) articulates, moments of disconnection occur in all relationships, as failures in empathic attunement are common and unavoidable. Consequently, Jordan (2008) and Miller and Stiver (1997) argue that *the way in which disconnection is addressed* is the most important element in psychological and relational health, and can result in stronger connection.

For instance, imagine an exchange within which Kate feels hurt by Maria, and communicates her pain to Maria. If Maria responds to Kate's disclosure with empathy and responsiveness, Jordan (2008) argues that Kate "learns that she matters, that she can be relationally effective, and can bring about positive change in a relationship" (p. 2). However, if Maria were to respond in a manner that was invalidating or shaming, especially if she is in a position of power and authority as compared to Kate, Kate may feel shut down or humiliated (Jordan, 2008). Kate may become self-protective and may withhold her feelings, thoughts, or needs in the future in this relationship, and perhaps others, which can lead to chronic disconnection (Jordan, 2008). Chronic disconnection can result in the following: (1) a drop in one's energy; (2) a decreased sense of worth; (3) feelings of confusion; (4) less productivity, and (5) withdrawal from relationships (Jordan, 2008; Miller & Stiver, 1997).

### **Relational-cultural theory, mutuality, and eating disorder symptomatology.**

From the perspective of feminist theory, the relational-cultural model understands disconnections and disruptions in relationships, examples of a lack of perceived mutuality, as “predisposing, precipitating, and perpetuating factors” of eating disorder symptomatology (Tantillo, 2000, p. 100). As was discussed in previous sections of this literature review, cultural expectations about social roles in Western societies seem to prioritize disconnection, and traditional models of psychosocial development emphasize separation and independence (Erikson, 1968).

Consequently, developing healthy interdependence, a developmental goal that may be especially important for the psychological health of girls and women, can be challenging, as it does not always align with cultural expectations (Jordan et al., 1991). Writing from a relational perspective, Maine (2001) has argued that “prevailing social pressures to devalue and detach from others *also disconnect women from their own emotional, psychological, and physical needs*, thereby increasing the risk of body image, self-esteem, and eating problems in a culture that idealizes very thin, artificially sculpted women’s bodies” (Maine, 2001, p. 1302, italics added).

This quote highlights a key theme of psychological development that has long been reflected by relational and self psychological theorists – that it is through empathic and validating connections with significant others that individuals develop and maintain realistic and stable self-esteem and self-efficacy, the capacity for self-regulation, a cohesive sense of self, and a connection to one’s authentic internal experience (e.g., thoughts, feelings, and needs) (Kohut, 1971; Tantillo & Sanftner, 2010). Consonant with this perspective, Maine (2001) has argued that eating disorder symptomatology, across



the spectrum of severity, “reflects significant deficits in feelings of self-efficacy,” which can result from not being able to elicit empathic responsiveness from others in relationships (p. 1301). Her work emphasizes the idea that the control of weight and shape through extreme measures is often about coping with general feelings of personal ineffectiveness and loss of control, especially in the context of relationships, rather than just about being thin (Maine, 2001).

**Empirical evidence for mutuality and disordered eating.** The previous sections of this literature review have provided theoretical support for the connections between the constructs of mutuality and eating disorder symptomatology. A small body of research has begun to substantiate these theoretical and clinical claims with empirical evidence in clinical and community samples. For example, Sanftner and colleagues (2004) explored the association between perceived mutuality in relationships with partners and friends and disordered eating. The sample was comprised of 74 women, ranging in age from 18 to 58 ( $M = 35$ ), who were recruited from a university medical center outpatient psychiatry clinic and through newspaper advertisements. Thirty-five of the participants had been diagnosed with an eating disorder, and 39 did not have a psychiatric diagnosis and served as the control group. As compared to the control group, the eating disorder group reported lower levels of perceived mutuality with both partners and friends. Furthermore, perceived mutuality with friends differentiated the eating disorder and control groups of participants even when controlling for depression. Sanftner and colleagues (2004) argued that their results suggest that “the disconnecting aspects of relationships may play a powerful role in the phenomenology of eating disorders” (p. 86).

In another study, Wechsler and colleagues (2006) explored mutuality in the

relationship with one's romantic partner and eating disorder symptomatology in an ethnically diverse sample of 149 college women. They found that higher levels of mutuality were significantly negatively correlated with the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) subscales of Interpersonal Distrust ( $r = -.29, p < .001$ ) and Interoceptive Awareness, defined as confusion in recognizing and labeling emotions and body sensations ( $r = -.26, p < .01$ ). In other words, as perceived mutuality increased, interpersonal distrust and emotional confusion decreased. The EDI-2 is a self-report measure of eating disorder psychopathology and general psychopathology that has been associated with disordered eating. However, unlike in the study by Sanftner and colleagues (2004), Wechsler and colleagues (2006) did not assess for the number of participants in the sample who met the criteria for clinical or subclinical eating disorder symptomatology, so we do not know how much variability in eating disorder symptomatology was present in their sample. Consequently, it is difficult to know whether the small effect sizes found in this study may have been a function of limited variability in the sample on this key variable. Furthermore, this study explored levels of perceived mutuality in the relationship with one's partner, but the current study will expand our knowledge of perceived mutuality by exploring it in the context of relationships with one's mother, father, and close friends.

In another study, Tantillo and Sanftner (2010) explored the relationship between mutuality and disordered eating in a sample of 216 adolescent girls and women being treated for eating disorders at the outpatient and partial hospitalization levels of care. Results indicated that, overall, higher mutuality scores across relationships with one's mother, father, partner, and friend, were correlated with lower scores on the Eating

Disorders Inventory-2 (EDI-2; Garner, 1991). Tantillo and Sanftner (2010) found that higher mutuality scores were negatively correlated with the EDI-2 subscales that measured general psychopathology associated with eating disorders (e.g., Interpersonal Distrust, Social Insecurity, and Ineffectiveness) ( $r = -.29$  to  $-.58$ ,  $p < .05$ ). In terms of eating disorder pathology, higher mutuality scores across mother, father, and friend relationships were related to lower scores on the Body Dissatisfaction subscale of the EDI-2 ( $r = -.26$ ,  $-.42$ ,  $-.23$ , respectively,  $p < .05$ ).

Furthermore, the researchers investigated whether participants' scores on the mother and father subscales of the mutuality measure could be used to predict eating disorder symptomatology. Results indicated that scores on the mother and father mutuality forms predicted scores on Interpersonal Distrust, Social Insecurity, Interoceptive Awareness, Impulse Regulation, and Ineffectiveness. Interestingly, only scores on the father mutuality form predicted scores on the Body Dissatisfaction and Bulimia subscales. Tantillo and Sanftner (2010) noted that this finding calls for further investigation as mothers are often assumed to have a greater impact on their daughter's body image and eating behaviors. Furthermore, based on the findings of this study, Tantillo and Sanftner (2010) argued that more research is needed to understand the potential protective role of mutuality among various other risk factors, such as the sociocultural and personal factors included in the current study. To my knowledge, no other studies have included mutuality within the context of a multidimensional model, taking into consideration the amount of variance in eating disorder symptomatology that is explained by sociocultural, personal, and other relational factors.

Finally, Tantillo and Sanftner (2003) explored the effectiveness of short-term group

therapy with a focus on mutuality as a key factor for change. Participants were 15 women who were diagnosed with either bulimia nervosa or binge eating disorder, and were randomly assigned to a cognitive-behavioral therapy (CBT) group or a relational therapy (RT) group with a focus on mutuality, both of which were manualized and lasted for 16 weeks. Measures of disordered eating, depression, and mutuality were administered at baseline, at 8 and 16 weeks, and at 6- and 12-month follow-ups. Results indicated that participants in both the RT and CBT treatment conditions showed significant improvements in binge eating, purging, and depression at end of treatment and across follow-up assessment times (Tantillo & Sanftner, 2003).

**Implications for psychotherapy.** Mutuality in relationships is a meaningful protective factor to explore because it can be proactively cultivated and improved, particularly through psychotherapy with a relational focus. Historically, much of the literature on the treatment of disordered eating has focused on cognitive-behavioral treatments (Fairburn & Cooper, 1989; Fairburn, Marcus & Wilson, 1993). However, more recent work has acknowledged the complexity of eating disorders and has incorporated interpersonal constructs (e.g., interpersonal schemas and patterns, empathic responsiveness) into the treatment scholarship (e.g., Fairburn et al., 2003; Maine, 2001; Tantillo, 2006). For instance, Fairburn's (2008) most recent handbook incorporated a module for ameliorating interpersonal problems into a CBT protocol, thereby broadening our understanding of the complexity and multifaceted nature of disordered eating.

Although some models of therapy are just beginning to consider the critical importance of relationships in the treatment of eating disorders, relational-cultural scholars have always championed treatment with an emphasis on empathy, authenticity,

and mutuality as a means of healing disconnections with others, and ultimately, with the self (Maine, 2001; Tantillo, 2000; Tantillo & Sanftner, 2003). Moreover, these scholars agree that the client-therapist relationship is at the very core of therapy that is informed by relational-cultural theory (Jordan 1997; Maine, Davis, & Shure, 2009). Specifically, within the safety of the therapeutic relationship, clients can experience being emotionally vulnerable and allowing themselves to influence and be influenced by the therapist (Sanftner et al., 2004). Jordan (2008) suggests that when the therapist provides empathic attunement and mutuality for the client, the client begins to feel accepted and known, and feelings of isolation, shame, depression, and fragmentation can decrease. Specifically for clients who struggle with disordered eating, participating in a therapeutic relationship that is characterized by mutuality can help the client gain insight into the connections between her relationships with food, others, and herself (e.g., genuine thoughts, feelings, and needs) (Sanftner et al., 2004). The goal of this treatment is to gradually shift the client's disconnection into reconnection with the self and others so that as more fulfilling connections become available, food is no longer the focus of relational energy (Maine, 2001).

**Self-silencing.** In addition to the construct of perceived mutuality, scholars have explored the relationship between another relational construct, self-silencing, and eating disorder symptomatology (e.g., Norwood et al., 2011; Shouse & Nilsson, 2011). Self-silencing is defined as an active process of withholding emotions, opinions, strengths, and capabilities perceived to be threatening to the other in order to maintain the relationship, and has been positively related to disordered eating (Jack, 1991, 1999; Norwood et al., 2011; Shouse & Nilsson, 2011). The construct of self-silencing was

borne out of Gilligan's (1982, 1988) seminal works on the female "voice," or the expression of thoughts and feelings by girls and women, which pioneered a body of feminist scholarship. Building on the work of Gilligan, Jack (1991) explored the role of "voice" within the context of relationships. Jack (1991) argued that the establishment of positive, close connections is a primary motivation throughout life. Furthermore, she argued that women develop specific relational schemas about how to create and maintain close relationships, and these schemas may be highly influenced by cultural values and judgments about who women "should" be to others. Specifically, a group of important feminist scholars (e.g., Gilligan, 1982, 1988; Jack, 1991; Maine, 2001; Pipher, 1994) have written about the strong social demands on women to be nice, cooperative, pleasing, and self-sacrificing in relationships, in order to maintain connection.

Consequently, cultural and social role expectations set up a fundamental conflict for women. Specifically, in order to fulfill the desire for connectedness, some women feel pressure to be selfless, nurturing, and nice, but what happens when their own needs, desires, emotions, and "voice" do not fit with these expectations (Jack, 1991, Maine, 2001)? Jack has argued that this conflict results in "self-silencing" for some women, or an active process of withholding emotions, opinions, strengths, and capabilities perceived to be threatening to the other in order to maintain the relationship (Jack, 1991, 1999). Wechsler and colleagues (2006) have argued that self-silencing is similar to the "central relational paradox" described by relational-cultural theorists; specifically, one attempts to preserve connection in a non-mutual relationship by paradoxically keeping parts of oneself out of the relationship. Otherwise stated, although the goal of self-silencing is to maintain a sense of intimacy, harmony, and connectedness with others, it actually creates

disconnection and inauthenticity because parts of oneself are not known to the other (Jack, 1991, 2011).

In addition to having an impact on the relationship, feminist theorists have also proposed that self-silencing can have a pervasive impact on the self (Gilligan, 1988; Jack, 1991; Maine, 2001; Pipher, 1994). Specifically, curbing one's self expression can lead to the experience of a "divided self" where one's inner experience contrasts greatly with one's outward portrayal (Jack, 1991). Gilligan (1982, 1988) has written about the same idea as a distinction between the "true or authentic self" which one experiences inwardly and the "false or perfect self" which one projects outwardly. As the maintenance of a "false" or "perfect" self involves chronic negation and suppression of true thoughts, needs, and emotions (especially negative emotions such as anger) it has been proposed that an inadequate sense of self, characterized by deficits in self-awareness, self-esteem, and self-efficacy, may develop as a result (e.g., Gilligan, 1982, 1988; Jack & Dill, 1992; Pipher, 1994).

Self-silencing has been found to have implications for women's psychological health. Jack's (1991) initial interest in self-silencing grew out of a desire to understand the socially gendered and relational context of women's depression, and indeed, a body of research has been established to support the association between self-silencing and depression (Cramer, Gallant, & Langlois, 2005; Jack & Dill, 1992; Thomson, 1995). Consonant with relational-cultural theory (e.g., Jordan et al., 1991), Jack (1991) has written about the depressogenic effects of disconnection from others and from the self. In listening to depressed women's narratives about relationships as part of her own research, Jack (2011) found that "part of the hopelessness and helplessness in their

depression stemmed from the sense that moving toward one major life goal—intimacy—foreclosed the other—authenticity” (p. 525).

**Self-silencing and eating disorder symptomatology.** In seeking to expand the research on self-silencing and depression, scholars have also theorized about the association between self-silencing and eating disorder symptomatology. Maine (2001) has suggested that the gender disparity inherent in eating disorders calls for psychologists to consider the unique aspects of female psychological development in their etiology, maintenance, and treatment. Furthermore, as the majority of disordered eating behaviors begin during adolescence and young adulthood, scholars have focused on understanding how the developmental changes and transitions specific to this developmental stage might contribute to the onset of eating disordered symptomatology (Smolak & Levine, 1996). Theory suggests that the process of self-silencing begins in adolescence and young adulthood, a time when gendered social role expectations become more salient (Spinazzola, Wilson, & Stocking, 2002). Furthermore, during adolescence and young adulthood, the size and shape of the female body becomes confounded with personal qualities such as status, power, and self-worth (Maine, 2001). Those girls and women who have higher needs for approval from others, as well as those who seek to achieve a “superwoman” ideal (e.g., high achieving, self-sacrificing, and attractive according to cultural ideals) are most at risk for disordered eating behaviors (Streigel-Moore et al., 1993).

In addition, self-silencing may be related to disordered eating through displacement (Schupak-Neuberg & Nemeroff, 1993). Displacement theory suggests that unspoken thoughts and feelings may be redirected inwardly, and in the context of self-



silencing, negative feelings, especially anger, which could be threatening to connection if expressed, may be displaced onto the body (Schupak-Neuberg & Nemeroff, 1993). From this perspective, Shouse and Nilsson (2011) suggest, “disordered eating can be viewed as an alternative coping strategy in which food is used to self-regulate or self-soothe” (p. 451). Empirical evidence suggests that the experience of the “false” self, or the self that is presented outwardly while the “true” self remains unexpressed, has been associated with low self-esteem and body image disturbance, both of which are consistent predictors of eating disorder symptomatology (American Psychiatric Association, 1994).

**Empirical evidence for self-silencing and disordered eating.** A small, but growing, body of empirical research has begun to support the theoretical associations between self-silencing and eating disturbances. For instance, self-silencing has been related to drive for thinness, internalization of a thin-body ideal, and other characteristics of disordered eating (Geller et al., 2000; McCann, 1995; Morrison & Sheahan, 2009; Piran & Cormier, 2005; Smolak & Munstertieger, 2002). Additionally, Geller and colleagues (2000) found that women with Anorexia Nervosa, as compared to women without a psychiatric diagnosis, had significantly higher scores on all four subscales of the self-silencing measure (STSS; Jack & Dill, 1992) and higher anger suppression scores, even after controlling for depression and self-esteem. The four subscales of the self-silencing measure are the following: (1) externalized self-perception, or judging the self by external standards; (2) care as self-sacrifice, or securing attachments by putting the needs of others before the self; (3) silencing the self, or inhibiting one’s self-expression and action to avoid conflict and possible loss of relationship; and (4) the divided self, or the experience of presenting an outer compliant self to live up to feminine

role imperatives while the inner self grows angry and hostile (Jack & Dill, 1992).

To my knowledge, only one study has explored the relationships between self-silencing, perceived mutuality, and eating disorder symptomatology. In this study, Wechsler and colleagues (2006) found a negative correlation between mutuality and silencing the self ( $r = -0.37, p < .001$ ) in a sample of 149 college women. Furthermore, results showed a positive correlation between the Silencing the Self Scale and the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) subscales of Interpersonal Distrust ( $r = .21, p < .05$ ) and Interoceptive Awareness ( $r = .41, p < .05$ ). As a reminder, the EDI-2 is a self-report measure of eating disorder psychopathology and general psychopathology that has been associated with disordered eating. Furthermore, participants' scores on the Externalized Self-Perception subscale of the STSS explained 14% of variance in the EDI subscale of Drive for Thinness and 9% of the variance in the Bulimia subscale, and these results were statistically significant (Wechsler et al., 2006). Lastly, the results of a canonical correlation analysis yielded the following significant pattern: low mutuality combined with high self-silencing was significantly correlated with high scores on the Ineffectiveness, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Impulse Regulation, and Social Insecurity subscales of the EDI (Wechsler et al., 2006).

Despite these valuable findings, Wechsler and colleagues (2006) did not assess for the number of participants in the sample who met the criteria for clinical or subclinical eating disorder symptomatology, so we do not know how much variability in eating disorder symptomatology was present in their sample. The, in the current study, we sought to extend Wechsler and colleagues' (2006) findings by specifying how many participants met the full eating disorder diagnostic criteria, and also exploring whether

the results held across different levels of eating disorder symptomatology. Furthermore, to my knowledge, the current study was the first to explore the relationships between mutuality, self-silencing, and disordered eating within the context of a multidimensional model of sociocultural, personal, and relational risk and protective factors.

### **Sociocultural and Personal Factors**

In addition to relational factors just reviewed, the multidimensional model of eating disorder symptomatology also includes sociocultural and personal risk and protective factors (Tylka & Subich, 2004). The next section of this literature review will summarize the theoretical and empirical scholarship on the one sociocultural factor included in this model, namely, sociocultural pressures for thinness, and the four personal factors: internalization of the thin ideal stereotype, body dissatisfaction, poor interoceptive awareness, and negative affect. I begin with a review of the key sociocultural factor included in the current study and then segue into a discussion of the personal factors.

Feminist scholars have theorized that sociocultural pressures for thinness contribute significantly to the etiology and maintenance of eating disorder symptomatology among girls and women (e.g., Stice, 1994; Striegel-Moore et al., 1993). Sociocultural influences include the media, family, friends, and romantic partners. For instance, media images of perfectly crafted female bodies have become a world-wide phenomenon as a result of globalization and changing social roles (e.g., more women with access to technology) (Maine & Bunnell, 2010). These sociocultural influences associate thinness with desirable qualities such as well-being, positive personality attributes, and success, and consequently, can put pressure on girls and women to attain an ideal body weight and shape through disordered eating behaviors (Stice et al., 1996).

Empirical research supports the theory that sociocultural pressures for thinness are related to eating disorder symptomatology among samples of adolescent girls and young women (Pike, 1995; Stice, et al., 1996).

Sociocultural pressures for thinness have been conceptualized as a form of sexual objectification (Pipher, 1994). Sexual objectification is the reduction of a woman to her body or body parts, with the idea that her body or body parts are capable of representing her as a whole and have worth to the extent that they give pleasure to others (Bartky, 1990). According to objectification theory, experiences with sexual objectification from others can lead women to objectify themselves (e.g., “self-objectify”), through the process of internalization, and to consequently equate their self-worth with their appearance (Fredrickson & Roberts, 1997). When sexual objectification takes on the specific form of appraising women’s bodies and their worth in terms of *thinness*, girls and women may internalize the particular stereotype of the “thin-ideal” (Fredrickson & Roberts, 1997). Internalization of the thin-ideal stereotype represents a personal risk factor for eating disorder symptomatology (Tylka & Subich, 2004). Empirical research has found that internalization of the thin-ideal stereotype is related to eating disorder symptomatology among college women (Heinberg et al., 1995; Stice, Ziemba, et al., 1996).

Sociocultural pressures for thinness are also problematic because the idealized standard of thinness that they portray is impossible for most women to attain (Maine, 2001; Stice et al., 1996). Again, consonant with objectification theory, girls and women may self-objectify and internalize the idea that they need to achieve a particular standard of weight in order to feel worthy (Fredrickson & Roberts, 1997). Ultimately, when they

are unable to attain these unrealistic weight standards, girls and women may experience negative feelings, especially shame, toward their bodies, and these feelings contribute to body image disturbance (Fredrickson & Roberts, 1997; Maine, 2001). Body image disturbance has been defined as encompassing body dissatisfaction, body shame, and preoccupation with size and shape, and represents a personal risk factor for disordered eating (Tylka & Subich, 2004). Indeed, empirical research supports the theory that internalization of the thin-ideal stereotype predicts unique variance in body image disturbance in a sample of college women (Noll & Fredrickson, 1998). Furthermore, research has established a clear and robust connection between body image disturbance and eating disorder symptomatology (Cattarin & Thompson, 1994; Phelps et al., 1999). Specifically, girls and women who experience higher levels of body image disturbance are more likely than individuals who are satisfied with their bodies to engage in disordered eating behaviors in the pursuit of thinness (Fredrickson & Roberts, 1997; Stice et al., 1996; Thompson et al., 1995).

Body image disturbance has also been associated with the third personal factor that I will discuss – poor interoceptive awareness (Muehlenkamp & Saris-Baglama, 2002). Poor interoceptive awareness is a difficulty with identifying one's bodily sensations, whether they be emotional sensations or sensations of hunger and satiety (Lerner, 1993; Tylka & Subich, 2004). Research by Parker, Garner, Leznoff, and Sussman (1991) has shown that women with eating disorder symptomatology express a difficulty in identifying and expressing their internal states. Looking again toward objectification theory, Fredrickson and Roberts (1997) suggest that girls and women with higher levels of body image disturbance may also experience higher levels of poor

interoceptive awareness. Specifically, these girls and women may suppress their hunger cues, and subsequently, other internal sensations such as emotions, in an effort to lose weight and decrease their body dissatisfaction. Indeed, research with college women has found that poor body image predicts poor interoceptive awareness, which in turn predicts eating disorder symptomatology (Muehlenkamp & Saris-Baglama, 2002; Noll & Fredrickson, 1998; Tylka & Subich, 2004). Additionally, disordered eating behaviors such as restricting, binge eating, and purging may also develop as a way to cope with painful emotions and avoid internal awareness (Heatherton & Baumeister, 1991).

The fourth and final personal risk factor for eating disorder symptomatology that I will discuss is negative affect. Negative affect is the experience of a generalized negative mood state or emotionality (Watson, Suls, & Haig, 2002). Negative affect also often includes the experience of high levels of neuroticism (e.g., depression, anxiety, irrational cognitions, maladaptive coping, and a lack of impulse control), and low levels of self-esteem (Costa & McCrae, 1992; Watson, Suls, & Haig, 2002). Fredrickson and Roberts (1997) suggest that objectification theory can help to explain the relationship between negative affect and eating disorder symptomatology. Specifically, they suggest that when girls and women internalize the thin ideal stereotype (e.g., self-objectify) as a result of sociocultural pressures for thinness (e.g., one form of sexual objectification), and believe that their self-worth is inextricably tied to their appearance, they are likely to experience lower levels of self-esteem and higher levels of negative affect when they are unable to attain the thinness ideal (Fredrickson & Roberts, 1997). Consonant with this theoretical proposition, empirical research has found that pressure for thinness directly predicts negative affect (Thompson et al., 1999).

The relationship between negative affect and sociocultural risk factors and other personal factors may also be bidirectional. That is, sociocultural pressures for thinness may predict increased negative affect, and increased negative affect may, in turn, make it more likely for women to internalize the thin ideal and objectify themselves (Thompson et al., 1999). In essence, women with high baseline levels of negative affect may turn this negative emotionality toward their bodies (Thompson et al., 1999). Indeed, researchers have found that, in a sample of college women, the endorsement of high levels of negative affect was predictive of high internalization of the thin ideal and high levels of body dissatisfaction (Striegel-Moore & Cachelin, 1999; Thompson et al., 1999). Empirical research over the last few decades has also supported the proposed relationship between high levels of negative affect (comprised of high levels of neuroticism and low levels of self-esteem) and eating disorder symptomatology.

In summary, the first empirically-tested multidimensional model of risk factors for and protective factors against eating disorder symptomatology served as the framework for the present study (Tylka & Subich, 2004). As reviewed above, this multidimensional model provided empirical support for the importance of a combination of relational, sociocultural, and personal factors in predicting disordered eating. Despite making a unique contribution to the variance in disordered eating, the relational variables in Tylka and Subich's (2004) study, social support from family and social support from friends, were the least robust predictors in the multidimensional model. While these effects were statistically significant, and may have clinical significance, our understanding of the connection between relational factors and disordered eating may be enhanced by the measurement of constructs from theories that provide a richer and more

culturally-specific perspective on women's psychological development. Consequently, the feminist framework of relational-cultural theory was used in the present study to conceptualize the relational variables as it does so differently than has previous research utilizing Tylka and Subich's (2004) model. We sought to augment the multidimensional theory by exploring whether two other relational variables, namely, perceived mutuality and self-silencing, added additional and unique variance to the prediction of eating disorder symptomatology in the context of sociocultural, personal, and other relational factors.



## **CHAPTER THREE**

### **Statement of the Problem**

Eating disorders are chronic conditions that can result in a greatly diminished quality of life in the personal, interpersonal, and health domains (Kashubeck-West & Mintz, 2001). Consequently, psychologists who are focused on the holistic functioning of individuals can make a valuable contribution to the multidimensional treatment of disordered eating and its psychological correlates. Although the prevalence of full syndrome eating disorders is relatively rare (e.g., between 1% and 3% of the population are diagnosed with Anorexia Nervosa or Bulimia Nervosa), many women (e.g., 19% to 32%; Mulholland & Mintz, 2001) suffer from symptoms of disordered eating within the subclinical range. These women often still experience a significant impairment in their quality of life and functioning across various domains (e.g., physical health, emotional health, relationship functioning) (Dancyger & Garfinkel, 1995; Engel et al., 2009; Kitsantas et al., 2003).

Recent research highlights the importance of measuring eating disorder symptomatology along a continuum to better understand the etiology, assessment, and treatment of both clinical and subclinical eating disorders in girls and women, as relatively little information is available on the experiences of women who do not meet full diagnostic criteria (Kashubeck-West & Mintz, 2001; Tylka & Subich, 2004). One concrete way that researchers can access and address a greater range of eating disorder symptomatology is to recruit from populations of girls and women outside of treatment settings – a university campus in the case of the current study (Kashubeck-West & Mintz, 2001). Recruiting participants from a non-clinical sample also has an additional

advantage – it may allow for greater diversity in the research sample as societal barriers sometimes preclude ethnically diverse individuals from accessing treatment services (Striegel-Moore & Cachelin, 2001). Consequently, in order to address these sampling gaps in the literature, the current study sampled from a college student population that had an ethnically diverse student body, with the hopes of accessing a sample of young women with some diversity in their ethnic identities and disordered eating symptoms. By studying a group of college women, we sought to target a key demographic group among whom disordered eating is extremely prevalent (Striegel-Moore et al., 1990), and contribute to the field's understanding of the experiences of individuals with clinical *and* subclinical levels of eating disorder symptomatology (Franko & Omori, 1999).

In addition to seeking a broader sample of women who experience a range of disordered eating symptoms, the proposed study utilized a comprehensive model of risk factors for and protective factors against eating disturbances (Kashubeck-West & Mintz, 2001; Tylka & Subich, 2004). Historically, much of the eating disorder research has focused on simply identifying and cataloging risk factors for disordered eating (Kashubeck-West & Mintz, 2001). Although this has been an important and necessary start, scholars recently have advocated for the development of more multidimensional frameworks that serve to integrate the theoretical and empirical literatures. As mentioned in the literature review, Tylka and Subich (2004) were the first to use the theoretical literature as a guide to propose and empirically validate a multidimensional model of disordered eating that integrates sociocultural, personal, and relational factors. In the current study, we did not seek to retest Tylka and Subich's (2004) model using SEM (i.e., measure the interrelationships and ordering of the sociocultural, relational, and person

variables). Rather, we sought to account for the variance in eating disorder symptomatology that could be explained by a comprehensive set of sociocultural, relational, and personal variables, while also introducing two new variables – perceived mutuality and self-silencing.

Despite making a unique contribution to the variance in disordered eating, the relational variables in Tylka and Subich's (2004) study, social support from family and social support from friends, were the least robust predictors in the multidimensional model. While these effects were statistically significant, and may have clinical significance, our understanding of the connection between relational factors and disordered eating may be enhanced by the measurement of constructs from theories that provide a richer and more culturally-specific perspective on women's psychological development. More specifically, research generally has measured relationship variables in terms of the more global construct of social support, as compared to measuring more nuanced constructs that are grounded in feminist theory, such as perceived mutuality and self-silencing. These constructs have been used to articulate key aspects of interpersonal functioning, and a small, but growing, body of research has found that they relate to eating disorder symptomatology, and may provide predictive utility within a multidimensional model (Tantillo & Sanftner, 2010; Wechsler, Riggs, Stabb, & Marshall, 2006).

Researchers have just begun to study the relationship between perceived mutuality and disordered eating, but encouraging preliminary evidence suggests that higher levels of perceived mutuality (with mothers, fathers, peers, and partners) may act as a protective factor against disordered eating (Tantillo & Sanftner, 2010). Similarly, initial evidence

also suggests that higher levels of self-silencing may act as a risk factor for eating disorder symptomatology (Geller et al., 2000). More research is vitally necessary to understand the risk and protective roles of self-silencing and mutuality, respectively, among various other relational, personal, and sociocultural risk and protective factors (Tantillo & Sanftner, 2010). Both constructs are promising factors to explore, particularly because they represent areas within individuals' lives that can be proactively cultivated and improved, especially through relationally-oriented psychotherapy (Tantillo & Sanftner, 2010).

To summarize, in the current study, we sought to explore the relationships between the relational, personal, and sociocultural risk factors for eating disorder symptomatology, with the addition of the relational construct of mutuality as a protective factor and the construct of self-silencing as a relational risk factor. In doing so, we sought to further integrate the theoretical, empirical, and treatment literatures. Furthermore, the current study recruited from a non-clinical sample of college women, thus contributing to our understanding of eating disorder symptomatology along a continuum, particularly within a multiculturally-diverse group that is at high risk for disordered eating by virtue of being within the college environment. Based on an extensive review of the theoretical and empirical literatures, the following hypotheses and research questions are presented for the current study.

## **Hypotheses**

- 1. Higher levels of perceived mutuality (composite score across mother, father, and friends) will predict lower levels of perceived self-silencing.**

To my knowledge, only one study on disordered eating has explored the relationships between self-silencing and perceived mutuality. In this study, Wechsler and colleagues (2006) found a negative relationship between perceived mutuality and silencing the self ( $r = -.37, p < .001$ ) in a sample of 149 college women. In a study which explored these variables in a sample of women coping with cancer, the relationship between perceived mutuality and self-silencing was  $r = -.39, p < .01$  (Kayser, Sormanti, & Strainchamps, 1999). However, in the Kayser et al. (1999) study, a different measure of perceived mutuality, the Mutual Psychological Development Questionnaire (MPDQ; Genero et al., 1992) was used. While different, this measure was also developed within the context of relational-cultural theory.

**2. Higher levels of perceived self-silencing will predict higher levels of reported eating disorder symptomatology.**

A small, but growing, body of empirical research has begun to support the theoretical associations between self-silencing and eating disorder symptomatology. For instance, self-silencing has been related to drive for thinness, internalization of a thin-body ideal, and other characteristics of disordered eating (Geller et al., 2000; McCann, 1995; Morrison & Sheahan, 2009; Piran & Cormier, 2005; Smolak & Munstertieger, 2002). Additionally, Geller and colleagues (2000) found that women with Anorexia Nervosa, as compared to women without a psychiatric diagnosis, had significantly higher scores on all four subscales of the self-silencing measure (STSS; Jack & Dill, 1992) and higher anger suppression scores, even after controlling for depression and self-esteem.

In a sample of 149 college women, Wechsler and colleagues (2006) found a positive correlation between the Silencing the Self Scale and the Eating Disorder

Inventory-2 (EDI-2; Garner, 1991) subscales of Interpersonal Distrust ( $r = .21$   $p < .05$ ) and Interoceptive Awareness ( $r = .41$ ,  $p < .05$ ). The EDI-2 is a self-report measure of eating disorder psychopathology and general psychopathology that has been associated with disordered eating. Furthermore, participants' scores on the Externalized Self-Perception subscale of the STSS explained 14% of variance in the EDI subscale of Drive for Thinness and 9% of the variance in the Bulimia subscale, and these results were statistically significant (Wechsler et al., 2006).

**3. Higher levels of perceived mutuality with father will predict lower levels of reported eating disorder symptomatology.**

**4. Higher levels of perceived mutuality with mother will predict lower levels of reported eating disorder symptomatology.**

**5. Higher levels of perceived mutuality with friends will predict lower levels of reported eating disorder symptomatology.**

**6. Higher levels of perceived mutuality (composite of mother, father, and friends) will predict lower levels of reported eating disorder symptomatology.**

A small body of empirical research, mostly correlational in nature, has begun to support the relationship between perceived mutuality and disordered eating as proposed in the theoretical and clinical literatures. For example, Sanftner and colleagues (2004) explored the association between perceived mutuality in relationships with partners and friends and disordered eating in a sample of women, about half of whom had been diagnosed with an eating disorder, while the other half served as the control group. As compared to the control group, the eating disorder group reported lower levels of perceived mutuality with both partners and friends. Furthermore, perceived mutuality

with friends differentiated the eating disorder and control groups of participants even when controlling for depression. Sanftner and colleagues (2004) interpreted their results to suggest that “the disconnecting aspects of relationships may play a powerful role in the phenomenology of eating disorders” (p. 86).

In another study, Wechsler and colleagues (2006) explored perceived mutuality in the relationship with one’s romantic partner and disordered eating in a sample of college women. They found that higher levels of perceived mutuality were negatively correlated with the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) subscales of Interpersonal Distrust ( $r = -.29, p < .001$ ) and Interoceptive Awareness, defined as confusion in recognizing and labeling emotions and body sensations ( $r = -.26, p < .01$ ). In other words, as perceived mutuality increased, interpersonal distrust and emotional confusion decreased. As noted in the literature review, the EDI-2 is a self-report measure of eating disorder psychopathology and general psychopathology that has been associated with disordered eating.

Tantillo and Sanftner (2010) also explored the relationship between mutuality and disordered eating. As compared to Wechsler and colleagues (2006) who investigated the relationship between these variables in a sample of college students, Tantillo and Sanftner (2010) used a clinical sample of 216 adolescent girls and women being treated for eating disorders at the outpatient and partial hospitalization levels of care. Results indicated that, overall, higher mutuality scores across relationships with one’s mother, father, partner, and friend, were correlated with lower scores on the Eating Disorders Inventory-2 (EDI-2; Garner, 1991). Tantillo and Sanftner (2010) found that higher mutuality scores were negatively correlated with the EDI-2 subscales that measured

general psychopathology associated with eating disorders (e.g., Interpersonal Distrust, Social Insecurity, and Ineffectiveness) ( $r = -.29$  to  $-.58$ ,  $p < .05$ ). In terms of eating disorder pathology, higher mutuality scores across mother, father, and friend relationships were related to lower scores on the Body Dissatisfaction subscale of the EDI-2 ( $r = -.26$ ,  $-.42$ ,  $-.23$ , respectively,  $p < .05$ ).

Furthermore, the researchers investigated whether participants' scores on the mother and father subscales of the mutuality measure could be used to predict eating disorder symptomatology. Results indicated that scores on the mother and father mutuality forms predicted scores on Interpersonal Distrust, Social Insecurity, Interoceptive Awareness, Impulse Regulation, and Ineffectiveness. Scores on the father, but not mother, perceived mutuality form predicted scores on the Body Dissatisfaction and Bulimia subscales. Tantillo and Sanftner (2010) noted that this finding calls for further investigation as mothers are often assumed to have a greater impact on their daughter's body image and eating behaviors.

**7(a). The sociocultural (sociocultural pressures for thinness), personal (internalization of the thin ideal, body dissatisfaction, negative affect, and poor interoceptive awareness), and relational (social support) components of Tylka and Subich's (2004) multidimensional model will each predict unique significant variance in eating disorder symptomatology.**

**7(b). Perceived mutuality and self-silencing will each predict unique significant variance in eating disorder symptomatology when added to the regression model outlined in Hypothesis 7(a).**

Although the predictive validity of perceived mutuality and self-silencing have not



yet been explored within a multidimensional model of eating disorder symptomatology, Tantillo and Sanftner (2010) did find that perceived mutuality predicted disordered eating in a clinical sample of 216 adolescent girls and women being treated for eating disorders at the outpatient and partial hospitalization levels of care. Specifically, the researchers explored the predictive validity of only the mother and father forms of the perceived mutuality measure, not the peer and partner forms. Tantillo and Sanftner, (2010) found that scores on the mother and father mutuality forms predicted scores on the Interpersonal Distrust, Social Insecurity, Interoceptive Awareness, Impulse Regulation, and Ineffectiveness subscales of the Eating Disorder Inventory (Garner, 1991). Furthermore, scores on the father, but not mother, perceived mutuality form predicted scores on the Body Dissatisfaction and Bulimia subscales.

In regard to self-silencing, Wechsler and colleagues (2006) found that the Externalized Self-Perception subscale of the Silencing the Self Scale (Jack & Dill, 1992) explained 14% of variance in the Drive for Thinness subscale and 9% of the variance in the Bulimia subscale of the Eating Disorder Inventory, and these results were significant (Wechsler et al., 2006).

## **Research Questions**

### **1. Does self-silencing mediate the relationship between perceived mutuality and eating disorder symptomatology?**

No studies were found that explored whether self-silencing or perceived mutuality act as mediating variables with the outcome variable of eating disorder symptomatology. In addition, I searched for whether self-silencing and mutuality had been investigated as mediators in *any* studies (regardless of the other variables involved), and only found one

study where self-silencing had been examined as a potential mediator. In this study, Whiffen, Foot, and Thomson (2007) investigated the relationship between self-silencing, marital conflict, and depressive symptoms in a community sample of 115 couples. Results indicated that self-silencing significantly mediated the relationship between marital conflict and depressive symptoms.

Although Wiffen and colleagues (2007) did not study the same variables that were used in the current study, an argument can be made that the variables bear some similarity. For instance, the predictor variables, marital conflict and perceived mutuality, both broadly refer to relationship quality. Furthermore, the outcome variables, depressive symptoms and disordered eating, both refer to negative psychological symptoms. Thus, in order to craft a research question about mediation, the current study looked to the result of Wiffen and colleagues' (2007) study to inform the ordering of the variables.

**2. How will participants respond to the open-ended question, “Who in your life has had the most positive influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a positive influence on your body image and relationship with food?”**

**3. How will participants respond to the open-ended question, “Who in your life has had the most negative influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a negative influence on your body image and relationship with food?”**

Psychologists suggest that using both quantitative and qualitative data allows the researcher to gain a deeper understanding of the phenomenon of interest and enrich results (Hanson, Creswell, Clark, Petska, & Creswell, 2005; Tashakkori & Teddlie, 1998). As we sought to elucidate the nuanced role of relationships as risk factors for and protective factors against eating disorder symptomatology, we anticipated that the use of open-ended questions would add richness to our instrument-based quantitative findings in the form of participants' own words about their experiences (Greene & Caracelli, 1997). In addition, as we used a feminist theoretical framework, augmenting the quantitative data with qualitative findings allowed us to introduce constructivist and emancipatory paradigms (Ponterotto, 2005) to our methodology, further aligning it with the feminist value of "giving voice" to participants (Hanson et al., 2005).

## **CHAPTER FOUR**

### **Methods**

#### **Design**

The design of the current study was a correlational field study. The choice of a correlational field design was meant to optimize our understanding of subclinical and clinical eating disorder symptomatology as it occurs in a natural setting. A brief discussion of the strengths and limitations inherent in the design of this study is included in the limitations section. To address the hypotheses and research questions, linear regression analyses were used to determine the relationships between individual criterion variables and between the criterion variables and the outcome variable. Multiple regression analyses were conducted on eating disorder symptomatology to determine how the predictor variables related to these outcome variables. The focus of the current study was on investigating the predictive validity of eating disorder symptomatology by two key relational variables – perceived mutuality and self-silencing – in the context of a multidimensional model. In conjunction with multiple regression analyses, self-silencing was examined as a mediator between perceived mutuality and eating disorder symptomatology. Post-hoc analyses examined whether there were statistically significant differences between clinical and subclinical groups on key study variables, by conducting a series of one-way ANOVAS. Participants' responses to the open-ended questions were analyzed, and the results presented.

#### **Participants**

A power analysis was conducted in order to determine the number of participants needed for the study. According to Cohen's (1992) recommendations, 107 participants

were needed for a multiple regression with eight predictor variables to achieve a power of .80, a significance level of .05, and a medium effect size (Cohen, 1992). The .05 significance level, a more liberal level than .01, was chosen because the variables explored in the current study have not received much investigation in the literature, and a significance level of .01 poses the risk of missing clinically meaningful results. The effect size was based on previous estimates of the strength of the relationship between key relational variables and eating disorder symptomatology as found in the literature. Specifically, most studies have found medium effect sizes for the relational factors of perceived mutuality and self-silencing and the outcome eating disorder symptomatology (e.g., Tantillo & Sanftner, 2003, 2010; Shouse & Nilsson, 2011).

In order to be eligible to participate in the current study, participants needed to be female college students at least 18 years of age. The procedures for recruiting the sample are described below. A total of 664 students responded to the survey by completing the online consent form. Of these respondents, 587 (88.4%) were from the pool of students emailed through the Registrar's list, and 77 (11.6%) were students in Psychology classes. The response rate of students from the Registrar's list was 14.6%. In a study of student survey response rates across 321 institutions, Porter and Umbach (2006) found that response rates varied, and were influenced by a number of factors. Their results showed that response rates were significantly lower for web-based versus paper-based surveys, at public versus private institutions, and at universities located in urban or "urban fringe" areas of moderate to large sized cities – all of which describe the characteristics of the university from which the current study's sample was drawn. Porter and Umbach's (2006) findings suggest that response rates between 14-30% were not uncommon among

surveys and at universities that fit the above characteristics. It is not possible to calculate a response rate for students from Psychology classes, as the total number of students who were given information about research participation through the SONA system is unknown.

Of the 664 total respondents, 87 (13.1%) logged in, but did not respond to any survey items, and 123 (18.5%) had more than 15% missing data, and thus were eliminated due to attrition (George & Mallery, 2009). Little's MCAR was significant ( $\chi^2(18855)=19,866.417, p=.000$ ) suggesting that these data were not missing at random. Upon closer inspection of the data, it appeared that the missing data increased the further participants progressed into the survey, and that an uptick in the amount of missing data occurred at the second and third iterations of the Connection-Disconnection Scale (father and friend forms, respectively) (CDS; Tantillo & Sanftner, 2010). This pattern makes sense in that participants may have felt more fatigued the further they progressed into the survey, and also may have felt frustrated upon being asked to complete more than one version of the same measure (although each version asked about a different person in their lives), causing them to drop out. Three additional participants were eliminated because they did not meet the age requirements for participating in the study (e.g., were older than 24 years of age). The final sample was composed of 451 participants, resulting in a 68% completion rate (or a 78% completion rate if the 87 students who logged in but did not complete any survey items are excluded from the sample). The expectation maximization method was used to impute missing values in these remaining 451 participants (Schlomer, Bauman, & Card, 2010).

The participants were all female and ranged in age from 18 to 24, with a mean of 19.5 years old ( $SD=1.1$ ). The majority of participants self-identified their race/ethnicity as White (63.4%). Participants reported a range of SES backgrounds, with the majority of respondents reporting that their families made between \$60,000 per year to over \$150,000 per year. Participants also represented a range of years in school, with the majority (70.8%) identifying as first-year or sophomore students. A slight majority of participants (57.0%) reported their relationship status as “single.” The average BMI of participants was 22.6 ( $SD=3.6$ ), with a range of 15.6 to 39.2. The National Institutes of Health have put forth the following BMI values and their corresponding labels:  $<18.5$  = “underweight; 18.5 to 24.9 = “normal weight;” 25-29.9 = “overweight,” and 30 and over = “obese” (National Institutes of Health, 2014). Thus, the average participant in this study would be considered “normal weight,” although some at the tails of the sample would qualify as “underweight” and “obese.”

In terms of participants’ experiences with disordered eating, 18 participants (4.0%) self-identified as having been diagnosed with an eating disorder, the slight majority of the 18 participants (55.6%) with Anorexia Nervosa. The average amount of time that had passed since participants’ diagnoses was 4.4 ( $SD=1.4$ ) years. On a scale of 0-10, those participants who had been diagnosed with an eating disorder rated their current level of symptom severity at 5.0 ( $SD=2.5$ ). Those participants who reported having been diagnosed with an eating disorder also reported having received a variety of treatment options. In addition, while not formally diagnosed with an eating disorder, 71 participants (15.7%) percent of the sample scored at or above a 20 on the EAT (EAT – 26; Garner & Garfinkel, 1979), suggesting that these participants have levels of eating

disorder symptomatology that may meet the criteria for clinical diagnosis. For a more complete picture of participants' demographics and eating disorder diagnoses, see Table 1.

In order to contextualize our sample, participants' demographics were compared to those of college students in the United States. In terms of racial/ethnic identity, as of 2010, 61% of college students identified as White, 14% identified as African American/Black, 13% identified as Hispanic, and 6% identified as Asian/Pacific Islander (U.S. Department of Education, 2011). The racial/ethnic identities of participants in our sample are similar to that of the general population of college students in the United States. In terms of socioeconomic status, students who entered college in 2005 as first-year students came from households with an average parental income of approximately \$74,000 (Pryor, Hurtado, Saenz, Santos, & Korn, 2007). The socioeconomic status of the majority of students in our sample appears to be on par with or above the national average.

## **Procedures**

Participants were recruited through a range of undergraduate psychology classes and through the Registrar's Office at a large Mid-Atlantic university. Recruitment through the Psychology Department occurred through the advertisement of the study on a department-sponsored website through which students can participate in research. In addition, the principal investigator asked instructors in the Psychology Department to announce the study during class. Those students recruited through psychology classes were eligible to be awarded class credit for their participation. For the second recruitment strategy, the Registrar's Office provided an email reflector list to the



Table 1. *Demographics and disordered eating descriptive data.*

<b><i>Race/Ethnicity</i></b>	<b><i>N</i></b>	<b><i>Percentage*</i></b>
African American/Black	58	12.9%
Asian American/Pacific Islander	65	14.4%
Asian American/Pakistani	18	4.0%
Middle-Eastern/Arab	9	2.0%
Biracial/Multiracial	22	4.9%
Hispanic/Latino(a)	29	6.4%
Native American/Native Alaskan	3	0.7%
White	286	63.4%

\*Percentages do not equal 100% since participants could endorse more than one category.

<b><i>Year in School</i></b>	<b><i>N</i></b>	<b><i>Percentage*</i></b>
First Year	155	34.4%
Sophomore	164	36.4%
Junior	74	16.4%
Senior	55	12.2%
5 <sup>th</sup> Year Undergraduate or Beyond	2	0.4%

\* Percentages do not necessarily add up to 100%, as not all participants answered all demographic questions.

<b><i>Family Income</i></b>	<b><i>N</i></b>	<b><i>Percentage*</i></b>
Less than \$30,000	25	5.5%
\$30,000 to \$59,999	50	11.1%
\$60,000 to \$99,999	110	24.4%
\$100,000 to \$149,999	144	31.9%
\$150,000 or higher	109	24.9%

\* Percentages do not necessarily add up to 100%, as not all participants answered all demographic questions.

<b><i>Relationship Status</i></b>	<b><i>N</i></b>	<b><i>Percentage*</i></b>
Single	257	57.0%
In a Relationship	191	42.4%
Married	1	0.2%

\* Percentages do not necessarily add up to 100%, as not all participants answered all demographic questions.

<b><i>Eating Disorder Diagnosis</i></b>	<b><i>N</i></b>	<b><i>Percentage*</i></b>
Anorexia Nervosa	10	58.8%
Bulimia Nervosa	2	11.8%
Eating Disorder Not Otherwise Specified (EDNOS)	5	29.4%

\* Percentages are of those 18 participants who endorsed having been diagnosed with an eating disorder.

<i>Treatment Received</i>	<i>N</i>	<i>Percentage*</i>
Individual outpatient therapy (past)	10	55.6%
Individual outpatient therapy (present)	5	27.8%
Outpatient group therapy (past)	5	27.8%
Outpatient group therapy (present)	2	11.1%
Family therapy (past)	4	22.2%
Family therapy (present)	0	0.0%
IOP (past)	1	5.6%
IOP (present)	0	0.0%
PHP (past)	1	5.6%
PHP (present)	0	0.0%
Inpatient/residential (past)	2	11.1%
Inpatient/residential (present)	0	0.0%

\* Percentages are of those 18 participants who endorsed having been diagnosed with an eating disorder.

principal investigator of 4034 university students who met the following criteria: female, full-time undergraduate student, age 18-24, and lived on campus. The principal investigator emailed these students three times, once with an initial invitation, and twice with reminder invitations to complete the survey. Participants recruited through the Registrar's Office were eligible to enter into a raffle incentive for one of three \$25 gift cards to Amazon.com.

The survey was administered online through the Qualtrics system. Participants were provided with a link to the survey. Once participants clicked on the link to access the survey, they immediately viewed an informed consent page (See Appendix B), and endorsed that they were female, at least 18 years of age, and agreed with the parameters of the survey in order to continue. Then, participants completed the measures of the survey. The survey began with a measure with good face validity (i.e., Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988),

followed by the longer and more fatiguing measures in the middle (i.e., Connection-Disconnection Scale (Tantillo & Sanftner, 2010), and ending with the demographic questionnaire. The ordering of all of the measures is as follows: the Multidimensional Scale of Perceived Social Support; the Perceived Sociocultural Pressures Scale; the Connection-Disconnection Scale – Mother; the Ideal-Body Stereotype Scale – Revised; the Silencing the Self Scale; the Difficulty Identifying Feelings subscale of the Toronto Alexithymia Scale – 20; the Connection-Disconnection Scale – Father; the Neuroticism subscale of the Big Five Inventory; the Body Shape Questionnaire – Revised – 10; the Connection-Disconnection Scale – Friend; the Eating Attitudes Test – 26; the open-ended questions; and the demographic questionnaire. Measures were not counterbalanced because this feature was not possible with the Qualtrics system. The total survey took participants approximately 30-45 minutes to complete.

## **Measures**

In addition to a demographic questionnaire, the instruments used in this study include the following scales: (a) the Perceived Sociocultural Pressures Scale, (b) the Multidimensional Scale of Perceived Social Support, (c) the Connection-Disconnection Scale, (d) the Silencing the Self Scale, (e) the Ideal-Body Stereotype Scale – Revised, (f) the Neuroticism subscale of the Big Five Inventory, (g) the Body Shape Questionnaire – Revised – 10, (h) the Difficulty Identifying Feelings subscale of the Toronto Alexithymia Scale – 20, and (i) the Eating Attitudes Test – 26. Tylka and Subich's (2004) study was consulted when choosing the instruments for the current study.

**Demographic.** The demographic questionnaire developed by the principal investigator is included at the end of the survey (See Appendix C). Information

regarding age, race/ethnicity, year in school, relationship status, and parents' income was included on the demographic form. Participants were asked about whether they have received an eating disorder diagnosis, when they were diagnosed, the current severity of eating disorder symptomatology, and the type(s) of treatment that are currently being received or have been received in the past.

### **Sociocultural Factors**

Sociocultural factors were assessed through a measure of sociocultural pressures for thinness, measured using the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996).

**Perceived Sociocultural Pressures Scale.** The Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996) is a 10-item scale used to measure women's perceptions of pressures to be thin from significant others (e.g., family, friends, significant other) and the media (See Appendix D). An example item is "I've noticed a strong message from my family to have a thin body." In stating their level of agreement with the scale items, participants choose one of three response options: no pressure (scored as 1), some pressure (scored as 3), and a lot of pressure (scored as 5). A full-scale score was calculated by averaging participants' responses across all items. Higher scores represent higher perceived levels of pressures to be thin, and scores can range from 1 to 5. Internal consistency has been demonstrated in samples of high school and college women, with Chronbach's alpha of 0.87 and test-retest stability over a two-week period (Stice, Ziemba, et al., 1996). Construct validity has been demonstrated through positive correlations between the PSPS and retrospective reports of pressure from parents to lose weight during childhood ( $r = 0.51$ ; Stice, Ziemba, et al., 1996).

A clerical error was made in the administration of the PSPS to participants. Specifically, item 8 which reads, "I've noticed a strong message from the media to have a strong body," was accidentally omitted from the survey. Despite this error, the measure still demonstrated solid internal reliability,  $r = .84$ . Additionally, another item in the survey, item 7, which states, "I've felt pressure from the media (e.g., TV, magazines) to lose weight" also assessed for pressure from the media. Consequently, the media's role in participants' perceptions of sociocultural pressures for thinness was still addressed by the measure.

### **Relationship Factors**

Relationship factors included measures of social support, perceived mutuality, and self-silencing. Social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). Mutuality was measured using the Connection-Disconnection Scale (CDS; Tantillo & Sanftner, 2010). Self-silencing was measured using the Silencing the Self Scale (STSS; Jack & Dill, 1992).

**Multidimensional Scale of Perceived Social Support.** The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) is a 12-item self-report measure that was used to measure participants' perceptions of the adequacy of social support received from family, friends, and significant others (See Appendix E). Example items include, "I can count on my friends when things go wrong" and "I can talk about my problems with my family." The MSPSS uses a 7-point Likert-type scale with response options ranging from 1 (very strongly disagree) to 7 (very strongly agree). Higher scores indicated higher levels of perceived social support adequacy. A total average score was calculated, and this score can range from 1 to 7. The reliability of the

total scale has ranged between .88 and .91 (Zimet et al., 1988; Genero, Miller, Surrey, & Baldwin, 1992). In the current study, scores on the measure demonstrated a reliability estimate of .94. A test-retest reliability estimate of .85 has been reported in a college student sample (Zimet et al., 1988).

**Connection-Disconnection Scale.** The Connection-Disconnection Scale (CDS; Tantillo & Sanftner, 2010) is a 17-item measure that was used to assess perceived mutuality in participants' relationships with their mother, father, friends, and partner (See Appendix F). Administering all four iterations of this measure was prohibitive in the current study. It was likely to be too fatiguing and repetitive, thus posing a high risk that participants would not complete the survey, especially since there are a considerable number of measures total. Consequently, only the mother, father, and friend forms were used in the current study. The partner subscale was excluded as Tantillo and Sanftner (2010) specify that in order for the scale to be considered valid, participants need to currently be in a relationship that has lasted at least six months, and many college students may not meet this criteria.

In Section I of the measure, participants were asked to read a vignette that asked them to imagine talking with their father, mother, or friend about something difficult or painful that had transpired between them, and then to choose from a list of twelve options how they thought the other person typically would respond. Response options vary in terms of the other's level of perceived mutuality and empathic responsiveness, and include, "Gets defensive or hostile and verbally attacks or blames you," and "Listens and asks for clarification, but offers nothing about his own response to your concerns and feelings and, does convey a minimal understanding of your experience." In discussing

their reason for creating a vignette, Tantillo and Sanftner (2010) wrote, “We believed that a vignette representing a disconnection with the close other would best reflect how the respondent and the close other empathically negotiate difference in their relationship in order to promote each other's growth and the growth/repair of the relationship. This experience is a hallmark of perceived mutuality” (p. 104). This first section is meant to situate the respondent within an interaction and relationship, and can offer the researcher a glimpse into how the participant perceives the relationship, but it is not formally scored for research purposes.

Then, in Section II, participants were asked to respond to 16 items that ask about how they commonly felt after an exchange like the one described in the vignette, intended to tap into the dimensions of the construct of perceived mutuality, on a 6-point Likert type scale from 1 (no/not at all) to 6 (extremely). These items ask about the key theoretical elements of perceived mutuality: empathy, authenticity, engagement, empowerment, zest, diversity, self-worth, and desire for more connections (Miller & Stiver, 1997). Participants’ responses to the items in Section II were averaged across the 16 items and the mean score can range from 1 to 6, with higher scores representing higher levels of perceived mutuality in relationships with close others. A perceived mutuality score was calculated for each “target person” (e.g., average mutuality with mother across participants) by averaging participants’ scores. This calculation was used for Hypotheses 3, 4, and 5. Additionally, a composite mutuality score was calculated by averaging participants’ scores across “target persons.” This calculation was used for Hypotheses 1, 6, 7b, and Research Question 1.

Scores on items of the CDS demonstrated strong internal consistency in an outpatient sample of young women with eating disorders (mother  $r = .98$ , father,  $r = .98$ , friend  $r = .97$ , Tantillo & Sanftner, 2010). In the same sample, test-retest validity over a 2-week period was adequate (mother  $r = .73$ , father  $r = .86$ , friend  $r = .79$ , with  $p < .001$  for all subscales). In the current study, scores on the measure demonstrated the following reliability estimates: mother,  $r = .97$ ; father,  $r = .98$ ; friends,  $r = .98$ ; and across target individuals,  $r = .97$ . In previous research, scores on the CDS also demonstrated good construct validity, correlating with the Parental Attachment Questionnaire (PAQ; Kenny, 1987), Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Saranson, 1983), and Dyadic Adjustment Scale (DAS; Spanier, 2001), with correlations general ranging between  $r = .45$  to  $r = .80$  (Tantillo & Sanftner, 2010). Furthermore, Tantillo and Sanftner (2010) found that the CDS correlated negatively with the Eating Disorder Inventory – 2 (EDI-2; Garner, 1991). This finding suggests that the CDS is an adequate measure of perceived mutuality within a sample of women with eating disorder symptomatology as we would expect lower levels of mutuality to correlate with higher levels of eating disorder symptoms, and vice versa (Tantillo & Sanftner, 2010).

**Silencing the Self Scale.** The Silencing the Self Scale (STSS; Jack and Dill, 1992) is a 31-item self-report measure used to assess the construct of self-silencing in relationships (See Appendix G). The measure utilizes a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher total scores indicate greater levels of self-silencing, or less voice in relationships. An example item is “I find it hard to know what I think and feel because I spend a lot of time thinking about how other people are feeling.” The STSS includes the four following subscales: (1)



Externalized Self-Perception, or judging the self by external standards; (2) Care as Self-Sacrifice, or securing attachments by putting the needs of others before the self; (3) Silencing the Self, or inhibiting one's self-expression and action to avoid conflict and possible loss of relationship; and (4) The Divided Self, or the experience of presenting an outer compliant self to live up to feminine role imperatives while the inner self grows angry and hostile (Jack & Dill, 1992). Scale items 1, 8, 11, 15, and 21 were reverse-scored. Participants' scores were determined by summing up all 31 items for a full-scale score. Scores can range from 31 to 155.

Construct validity has been established as both the full scale and its subscales have demonstrated strong, positive relationships with elevated depression, decreased self-care, and low social support (Besser, Flett, & Davis, 2003; Jack & Dill, 1992). The STSS total score has demonstrated good internal consistency, with Cronbach's alphas ranging from .87 to .89 with samples of undergraduate women (Besser et al., 2003; Shouse & Nilsson, 2011), to .93 with a sample of battered women (Jack & Dill, 1992). In the current study, scores on the measure demonstrated a reliability estimate of .91.

### **Personal Factors**

Personal factors included measures of internalization of the thin ideal stereotype, neuroticism, body dissatisfaction, and poor interoceptive awareness. Internalization of the thin ideal was measured using the Ideal-Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996). Neuroticism was measured using the Neuroticism subscale of the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991). Body dissatisfaction was measured using the Body Shape Questionnaire – Revised – 10 (BSQ-R-10; Mazzeo, 1999). Poor interoceptive awareness was measured using the Difficulty Identifying

Feelings subscale of the Toronto Alexithymia Scale – 20 (TAS – 20; Bagby, Parker, & Taylor, 1994).

**Ideal Body Stereotype Scale – Revised.** The Ideal-Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996) is a 6-item measure that was used to measure participants’ level of internalization of the thin-ideal stereotype (See Appendix H). Participants were asked to rate their agreement with items about the qualities that they believe make women look attractive. An example item is “Slender women are more attractive.” The IBSS-R uses a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Participants’ responses were averaged for a total score, and higher scores indicate higher levels of internalization of the thin-ideal stereotype. Participants’ scores can range from 1 to 5. The measure demonstrated good estimates of internal consistency ( $r=.89$ ) and test-retest reliability ( $r=.80$ ) in samples of women (Stice, 1998; Stice, 2001). In the current study, scores on the measure demonstrated a reliability estimate of .79. The IBSS-R has been found to demonstrate good discriminant validity as it correlates significantly with a measure of sociocultural beliefs about attractiveness ( $r=.32, p<.01$ ) (Stice, Ziemba, et al., 1996).

**Big Five Inventory.** The Neuroticism subscale of the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) is a 8-item measure that was used to measure neuroticism as a key component of negative affect that has been related to disordered eating (See Appendix I). An example item is “I am someone who worries a lot.” Items are endorsed according to a 5-point Likert-type scale from 1 (strongly disagree) to 5 (agree strongly). Items 2, 5, and 7 of the Neuroticism subscale (items 19, 24, and 34 if using the full Big Five Inventory) were reversed scored. Participants’ scores were

calculated by averaging their responses. Scores can range from 1 to 5, and higher scores indicate high levels of anxiety, emotional instability, and negative emotionality. Previous research suggests that the Neuroticism subscale could be used separate from the full BFI, as was done in the current study, and demonstrated good internal reliability with alphas ranging between .82 to .85 in adult samples (DeYoung, 2006; Hampson & Goldberg, 2006; John et al., 1991; John & Srivastava, 1999). In the current study, scores on the measure demonstrated a reliability estimate of .83. Additionally, over a period of three months, test-retest reliabilities across subscales averaged .85 in a community sample (Rammstedt, & John, 2007).

**Body Shape Questionnaire.** The Body Shape Questionnaire – Revised – 10 (BSQ-R-10; Mazzeo, 1999) is a 10-item measure that was used to assess participants' level of body dissatisfaction (See Appendix J). An example item is "Have you found yourself brooding about your shape?" Items are endorsed according to a 6-point Likert-type scale from 1 (never) to 6 (always). Participants' scores were calculated by summing the total of their response values. Scores can range from 10 to 60, and higher scores indicate greater strength or salience of negative body image attitudes and body preoccupation. The BSQ-R-10 demonstrated good internal validity ( $r = .96$ ) and test-retest reliability over a three-week period ( $r = .91$ ) in samples of female college students (Mazzeo, 1999). In the current study, scores on the measure demonstrated a reliability estimate of .97. All items load highly on one factor, providing evidence for the measure's unidimensionality (Mazzeo, 1999). Furthermore, scores on the BSQ-R-10 correlate with scores on the Body Esteem Scale (Franzoi & Shields, 1984), another measure of body dissatisfaction, providing support for construct validity, and also

correlate with measures of eating disorder symptomatology, supporting its predictive validity (Mazzeo, 1999).

**Toronto Alexithymia Scale.** The Difficulty Identifying Feelings (DIF) subscale of the Toronto Alexithymia Scale (TAS – 20; Bagby, Parker, & Taylor, 1994) is a 7-item subscale that was used to assess poor interoceptive awareness (See Appendix K). An example item is “I am often confused about what emotion I am feeling.” Participants respond on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Participants’ scores on the DIF subscale were calculated by summing their responses across the 7 items, and scores can range from 7 to 35. Higher scores indicate more difficulty identifying feelings. The DIF subscale has been used separately from the full TAS-20 in previous studies (e.g., Tylka & Subich, 2004). Internal reliability estimates for the DIF subscale ranged between  $r = .78$  and  $r = .86$  in samples of college students (Mazzeo & Espelage, 2002). In the current study, scores on the measure demonstrated a reliability estimate of .89. The subscale also demonstrated adequate test-retest reliability over a 3-week period ( $r = .77$ ; Bagby et al., 1994). It has been found to be stable and replicable across clinical and nonclinical populations, and has demonstrated convergent validity through its correlation with a measure of psychological mindedness ( $r = -.68$ ) (Bagby et al., 1994).

### **Eating Disorder Symptomatology**

The outcome variable of eating disorder symptomatology was measured using the Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982).

**Eating Attitudes Test.** The Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979; Garner et al., 1982) was used to measure self-reported behaviors and thoughts associated with disordered eating (See Appendix L). The EAT-26 has three subscales: 1) Dieting, 2) Bulimia and Food Preoccupation, and 3) Control. Example items include, ‘I avoid eating when I am hungry’ and ‘I have gone on eating binges where I feel that I may not be able to stop.’ Participants respond to the EAT-26 using a 6-point Likert-type scale, ranging from 1 (never) to 6 (always). Garner and colleagues (1982) recommended that items marked as never, rarely, or sometimes be considered intermediate and given no points (e.g., scored as 0), whereas items marked as often, very often, or always be given 1, 2, and 3 points, respectively. Thus, the total scores range between 0 and 78 points.

The Eating Attitudes Test originally was designed to assess for full syndrome eating disorders, as diagnosed by the criteria of the Diagnostic and Statistical Manual of Mental Disorders (Shouse & Nilsson, 2011). Recently, Kashubeck-West, Mintz, and Saunders (2001) concluded that the EAT-26 can be used as a broader measure of disordered eating in a nonclinical sample, thus currently making it one of the most frequently used screening tools with a nonclinical population. When used as a continuous measure, EAT-26 scores over 20 indicate concerns regarding body weight, shape, or food (Mintz & O’Halloran, 2000). Furthermore, Mintz and O’Halloran documented that the EAT-26 differentiated between individuals with and without clinical levels of eating disturbances with a high accuracy rate of 90%. This finding demonstrates the EAT-26’s validity with clinical, subclinical, and non-clinical populations. Internal reliability has ranged from .79 to .94 with college student samples

(Kashubeck-West et al., 2001; Shouse & Nilsson, 2011). In the current study, scores on the measure demonstrated a reliability estimate of .92. The measure has also demonstrated good test-retest validity ( $r = .86$ ) (Mazzeo, 1999). Finally, scores on the EAT-26 have been found to be positively correlated with scores on other measures of disordered eating, providing evidence for construct validity (Brookings & Wilson, 1994; Garner et al., 1982; Tylka & Subich, 2004).

## CHAPTER 5

### Results

This chapter includes results from the following: preliminary analyses; analyses of the hypotheses, research questions, and open-ended questions; and additional exploratory analyses.

#### **Preliminary Analyses**

The analyses were completed using the statistical package software IBM SPSS Version 20. Each variable was checked for whether it met or violated statistical assumptions of linear regression and ANOVA analyses (e.g., normality, linearity, and homogeneity of variance). The following scales displayed skewness, as indicated by values greater than 1: Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988); Ideal-Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996); and Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979). All other distributions were close to normal for the other variables.

The data on all variables were carefully examined for outliers by converting raw scores to z-scores. Z-scores with values greater than or equal to  $\pm 3.29$  were considered outliers, in accordance with the parameters specified by Tabachnick and Fidell (2007), p. 73. The following variables exhibited between two and twelve outliers: social support, as measured by the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988); internalization of the thin ideal, as measured by the Ideal-Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996); perceived sociocultural pressures for thinness, as measured by the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996); and disordered eating, as measured by the Eating Attitudes Test-26

(EAT-26; Garner & Garfinkel, 1979). These variables were examined closely for data entry errors, implausible values, and measurement errors, and none were found (Barnett & Lewis, 1994). Each of these variables was inspected for whether any scores fell outside of the expected maximum or minimum range, and they did not. Thus, outliers were not likely due to errors of the above kinds. Next, the trimmed means of these variables were examined, and they were found not to differ substantially from the means calculated from the scores of all participants (Tabachnick & Fidell, 2007; Pallant, 2007).

Furthermore, upon examining prior research with each of these variables, the means and standard deviations reported in previous studies conducted with a college student population were similar to the means and standard deviations of these variables in the current study. For example, previous samples of female college students have scored high on the current study's measure of social support, resulting in a negatively skewed distribution (e.g., Clara, Cox, Enns, Murray, & Torgrudc, 2003; Dahlem, Zimet, & Walker, 1991). This makes sense in that many college students are likely to endorse that they receive basic levels of support from their family and friends, as measured by items such as "I can count on my friends when things go wrong," and "My family is willing to help me make decisions." Similarly, in previous research, female college students have reported a wide range of eating disorder symptomatology, with some students meeting clinical criteria for an eating disorder (e.g., Fitzsimmons-Craft, Bardone-Cone, & Harney, 2012). Consequently, while technically considered to be "outliers," participants who demonstrated high scores on the EAT-26 were retained because the purpose of the current study was to sample students with a range of eating disorder symptoms that reflect the range present within the general population of female college students.



In order to represent the full range of scores endorsed by participants, but not let outliers unduly distort our analyses, we used the non-parametric bootstrapping method for linear regression and ANOVA analyses that included the variables with outliers (e.g., social support, internalization of the thin ideal, perceived sociocultural pressures for thinness, and disordered eating) (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Mallinckrodt et al., 2006; Tabachnick & Fidell, 2007; Pallant, 2007; Shrout & Bolger, 2002). The bootstrapping procedure is viewed as a “best practice” for addressing non-normality, as this method demonstrates robustness in the presence of outliers (Mallinckrodt et al., 2006; Sheskin, 2004). As an additional check, analyses were conducted both with and without the outliers to see if the statistical estimates were comparable. Any discrepancies that occurred are reported in the relevant sections that follow.

The means, standard deviations, range, and internal consistency estimates of all of the scales were calculated and are presented in Table 2. All of the scales yielded acceptable internal consistency as indicated by Cronbach’s alphas ranging from .79 to .98. Bivariate correlations were conducted between the independent variables (e.g., each sociocultural, relational, and personal variable) and between the independent variables and the dependent variable (e.g., eating disorder symptomatology), and these correlations are presented in a correlation matrix (See Table 3).

### **Analyses for Hypotheses**

- 1. Higher levels of perceived mutuality (composite score across mother, father, and friends) will predict lower levels of perceived self-silencing.**

Table 2: *Reliability estimates, range, means, and standard deviations.*

<i>Measure</i>	<i>Possible Range</i>	<i>Sample Range</i>	<i>Scoring</i>	<i>Alpha</i>	<i>Mean</i>	<i>SD</i>
BFI-Neurotic	1-5	1-5	Scale 1-5 (higher=higher levels of neuroticism)	.83	3.22	0.77
BSQ-R-10	10-60	10-60	Scale 1-6 (higher=higher levels of body dissatisfaction)	.97	37.09	14.04
CDS-Dad	1-6	1-6	Scale 1-6 (higher=higher levels of perceived mutuality)	.98	3.26	1.37
CDS-Friends	1-6	1-6	Scale 1-6 (higher=higher levels of perceived mutuality)	.98	4.39	1.14
CDS-Mom	1-6	1-6	Scale 1-6 (higher=higher levels of perceived mutuality)	.97	3.57	1.23
CDS-Total	1-6	1-6	Scale 1-6 (higher=higher levels of perceived mutuality)	.97	3.74	0.92
EAT	0-78	0-66	Scale 1-6 (higher=higher levels of eating disorder symptoms)	.92	10.45	11.96
IBSS-R	1-5	1-5	Scale 1-5 (higher=higher levels of internalization of thin-ideal stereotype)	.79	3.64	0.61
MSPSS	1-7	1-7	Scale 1-7 (higher=higher levels of social support)	.94	5.69	1.12
PSPS	1-5	1-5	Scale 1-5 (higher=higher levels of perceived sociocultural pressures for thinness)	.84	2.09	0.77
STSS	31-155	40-142	Scale 1-5 (higher=higher levels of self-silencing)	.91	83.79	18.30
TAL-DIF	7-35	7-35	Scale 1-5 (higher=greater difficulty identifying feelings)	.89	16.66	6.60

BFI-Neurotic=Big Five Inventory, Neuroticism subscale; BSQ-R-10=Body Shape Questionnaire; CDS-Dad=Connection Disconnection Scale, Dad form; CDS-Friends=Connection Disconnection Scale, Friends form; CDS-Mom=Connection Disconnection Scale, Mom form; CDS-Total=Connection Disconnection Scale, Total score across all target individuals; EAT=Eating Attitudes Test; IBSS-R=Ideal Body Stereotype Scale-Revised; MSPSS=Multidimensional Scale of Perceived Social Support; PSPS=Perceived Sociocultural Pressures Scale; STSS=Silencing the Self Scale; TAL-DIF=Toronto Alexithymia Scale, Difficulty Identifying Feelings subscale.

Table 3. *Bivariate correlations between independent and dependent variables.*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. BFI-Neurotic	1											
2. BSQ-R-10	.31**	1										
3. CDS-Dad	-.25**	-.23**	1									
4. CDS-Friends	-.20**	-.12**	.29**	1								
5. CDS-Mom	-.21**	-.20**	.37**	.29**	1							
6. CDS-Total	-.30**	-.25**	.78**	.69**	.37**	1						
7. EAT	.25**	.61**	-.20**	-.10*	-.17**	-.22**	1					
8. IBSS-R	.13**	.35**	-.11*	-.05	-.05	-.10*	.31**	1				
9. MSPSS	-.13**	.02	.21**	.30**	.28**	.35**	-.05	.01	1			
10. PSPS	.19**	.65**	-.22**	-.12	-.28**	-.28**	.54**	.29**	-.10*	1		
11. STSS	.40**	.39**	-.34**	-.31**	-.34**	-.45**	.29**	.16**	-.28**	.33**	1	
12. TAL-DIF	.54**	.33**	-.30**	-.25**	-.30**	-.38**	.23**	.08	-.18**	.30**	.45**	1

BFI-Neurotic=Big Five Inventory, Neuroticism subscale; BSQ-R-10=Body Shape Questionnaire; CDS-Dad=Connection Disconnection Scale, Dad form; CDS-Friends=Connection Disconnection Scale, Friends form; CDS-Mom=Connection Disconnection Scale, Mom form; CDS-Total=Connection Disconnection Scale, Total score across all target individuals; EAT=Eating Attitudes Test; IBSS-R=Ideal Body Stereotype Scale-Revised; MSPSS=Multidimensional Scale of Perceived Social Support; PSPS=Perceive Sociocultural Pressures Scale; STSS=Silencing the Self Scale; TAL-DIF=Toronto Alexithymia Scale, Difficulty Identifying Feelings subscale  
 \*  $p < .05$ ; \*\*  $p < .01$  (two-tailed)

This hypothesis was supported by the data. The linear regression of perceived self-silencing scores (STSS) on scores on perceived mutuality across mother, father, and friends (CDS) was significant ( $F(1,449) = 111.77, p < .001, R^2 = .20$ ), a medium effect.

**2. Higher levels of perceived self-silencing will predict higher levels of reported eating disorder symptomatology.**

This hypothesis was supported by the data. The linear regression of reported eating disorder symptomatology (EAT - 26) on scores on perceived self-silencing (STSS) was significant ( $F(1,449) = 41.57, p < .001, R^2 = .09$ ), a medium effect.

**3. Higher levels of perceived mutuality with father will predict lower levels of reported eating disorder symptomatology.**

This hypothesis was supported by the data. The linear regression of reported eating disorder symptomatology (EAT - 26) on scores on perceived mutuality with father (CDS) was significant ( $F(1,449) = 19.11, p < .001, R^2 = .04$ ), a small effect.

**4. Higher levels of perceived mutuality with mother will predict lower levels of reported eating disorder symptomatology.**

This hypothesis was supported by the data. The linear regression of reported eating disorder symptomatology (EAT - 26) on scores on perceived mutuality with mother (CDS) was significant ( $F(1,449) = 13.49, p < .001, R^2 = .03$ ), a small effect.

**5. Higher levels of perceived mutuality with friends will predict lower levels of reported eating disorder symptomatology.**

This hypothesis was supported by the data. The linear regression of reported eating disorder symptomatology (EAT - 26) on scores on perceived mutuality with friends (CDS) was significant ( $F(1,449) = 4.27, p < .001, R^2 = .01$ ), a small effect.

**6. Higher levels of perceived mutuality (across mother, father, and friends) will predict lower levels of reported eating disorder symptomatology.**

This hypothesis was supported by the data. The linear regression of reported eating disorder symptomatology (EAT - 26) on scores on perceived mutuality across mother, father, and friends (CDS) was significant ( $F(1,449) = 21.97, p < .001, R^2 = .05$ ), a small effect.

**7(a). The sociocultural (sociocultural pressures for thinness), personal (internalization of the thin ideal, body dissatisfaction, negative affect, and poor interoceptive awareness), and relational (social support) components of Tylka and Subich's (2004) multidimensional model will each predict unique significant variance in reported eating disorder symptomatology.**

This hypothesis was partially supported by the data. A simultaneous regression analysis was conducted to explore this hypothesis. Reported eating disorder symptomatology (EAT - 26) was regressed on scores on sociocultural pressures for thinness (PSPS), internalization of the thin ideal (IRSS-R), body dissatisfaction (BSQ-R-10), negative affect (BFI), poor interoceptive awareness (TAS-20), and social support (MSPSS). The simultaneous regression was significant, ( $F(8,442) = 53.80, p < .001, R^2 = .42$ ), a large effect. Together, the set of predictor variables accounted for 42.1% of the variance in reported eating disorder symptomatology. The following variables each predicted unique, significant variance in reported eating disorder symptomatology: perceived sociocultural pressures for thinness, ( $\beta = 3.85, p < .001$ ); internalization of the thin ideal, ( $\beta = 1.72, p < .05$ ); and body dissatisfaction, ( $\beta = .34, p < .001$ ). The following variables did not account for unique, significant variance in reported eating disorder

symptomatology: negative affect, ( $\beta = 1.16, p = .09$ ); poor interoceptive awareness, ( $\beta = -.05, p = .57$ ); and social support, ( $\beta = -.34, p = .39$ ) (See Table 4).

**7(b). Perceived mutuality and perceived self-silencing will each predict unique significant variance in reported eating disorder symptomatology when added to the regression model outlined in Hypothesis 7(a).**

This hypothesis was not supported by the data. A simultaneous regression analysis was conducted to explore this hypothesis. Neither perceived mutuality ( $\beta = -.22, p = .70$ ) nor perceived self-silencing ( $\beta = .01, p = .83$ ) predicted unique significant variance in reported eating disorder symptomatology when added to the regression model (See Table 5).

**Analyses for Research Questions**

**1. Does self-silencing mediate the relationship between perceived mutuality and eating disorder symptomatology?**

The results of a series of regression analyses suggested that the necessary relationships for the mediation test were significant (Mallinckrodt, Abraham, Wei, & Russell, 2006; Preacher & Hayes, 2008) (See Table 6). Specifically, higher levels of perceived mutuality (CDS) were linked to lower levels of self-silencing (STSS) ( $\beta = -8.84, t(451) = -10.57, p < .001$ ) (path a). Higher levels of self-silencing were linked to higher levels of disordered eating (EAT - 26), ( $\beta = .16, t(451) = 4.84, p < .001$ ) (path b). Additionally, higher levels of perceived mutuality were linked to lower levels of disordered eating ( $\beta = -2.79, t(451) = -4.69, p < .001$ ) (path c).

The non-parametric bootstrapping approach was used as it allows researchers to increase statistical power without assuming multivariate normality when testing for

Table 4. *Simultaneous regression of disordered eating regressed on perceived sociocultural pressures for thinness, internalization of the thin ideal, body dissatisfaction, negative affect, poor interoceptive awareness, and social support.*

<i>Variables</i>	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>β</i>	<i>ρ</i>
Disordered eating					
Step 1:	.65	.42	53.80		.00
Sociocultural pressures for thinness				3.85	.00
Internalization of the thin ideal				1.72	.03
Body dissatisfaction				.34	.00
Negative affect				1.16	.09
Poor interoceptive awareness				-.05	.57
Social support				-.34	.39

Table 5. *Simultaneous regression of disordered eating regressed on perceived sociocultural pressures for thinness, internalization of the thin ideal, body dissatisfaction, negative affect, poor interoceptive awareness, social support, perceived mutuality, and self-silencing.*

<i>Variables</i>	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>β</i>	<i>ρ</i>
<b>Disordered Eating</b>					
Step 1:	.65	.42	40.22		.00
Sociocultural pressures for thinness				3.80	.00
Internalization of the thin ideal				1.71	.03
Body dissatisfaction				.34	.00
Negative affect				1.11	.11
Poor interoceptive awareness				-.06	.50
Social support				-.27	.53
Perceived Mutuality				-.22	.70
Self-silencing				.01	.83



Table 6. *Bootstrap analysis of magnitude and statistical significance of indirect effects.*

\* $p < .05$  level; \*\* $p < .001$

IV	MV	DV	<i>a</i> path coefficient (IV-MV)	<i>b</i> path coefficient (MV-DV)	<i>c</i> path coefficient (IV-DV)	<i>c'</i> path coefficient (direct effect)	Mean indirect effect (ab)	SE of mean	95% CI for mean indirect effect <sup>a</sup> (lower, upper)
PM	SS	ED	-8.84**	.16**	-2.79**	-1.39*	-1.40	.36	-2.1542, -.7450

*Note.* IV=Independent Variable; MV=Mediator Variable; DV= Dependent Variable; PM=Perceived Mutuality; SS=Self-Silencing; ED=Disordered Eating; <sup>a</sup> denotes values based on the unstandardized path coefficients. *b* = unstandardized beta.

significant indirect effects, and addresses the limitations of Baron and Kenny's (1986) causal-steps approach to mediation analysis (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Mallinckrodt et al., 2006; Shrout & Bolger, 2002). This mediation test specifies 5,000 randomly calculated bootstrap samples and a 95% biased corrected (BC) confidence interval. A significant mediation effect at the .05 level is concluded when the BC confidence interval does not contain zero (Mallinckrodt et al., 2006; Preacher & Hayes, 2008).

Results suggested that when self-silencing was added to the model as a mediator, the relationship between perceived mutuality and disordered eating was still significant, ( $\beta = -1.39$ ,  $t(451) = -2.14$ ,  $p = .03$ ), indicating that self-silencing did not *fully* mediate the relationship between perceived mutuality and disordered eating. However, the total indirect effects of perceived mutuality on disordered eating through self-silencing was -1.40 (95% bootstrap CI=-2.15, -.75,  $SE=.36$ ), indicating statistical significance as the confidence interval did not contain a zero (Preacher & Hayes, 2008). Thus, it appears

that there may be a partial mediation effect. Collectively, perceived mutuality and self-silencing accounted for 9.0% of the variance in disordered eating ( $F(2,448)=23.23$ ,  $p<.001$ ,  $R^2=.09$ ).

**2. How will participants respond to the open-ended question, “Who in your life has had the most positive influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a positive influence on your body image and relationship with food?”**

**3. How will participants respond to the open-ended question, “Who in your life has had the most negative influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a negative influence on your body image and relationship with food?”**

A modified version of the consensual qualitative research method (CQR-M; Spangler, Liu, & Hill, 2012) of qualitative data analysis was used to analyze participants' responses to Research Questions 2 and 3. A small team of researchers was composed, consisting of the principal investigator, a doctoral student in psychology, and one recent graduate who had studied and participated on research teams using CQR-M. As the first step, the research team discussed their biases and expectations as they pertained to the material being coded. Next, the coders read a subset of participants' open-ended responses ( $N = 60$ ), developed a set of domains and categories to summarize the key themes of the responses. Next, each member of the coding team independently coded participants' responses into one or more domains and categories, and the team convened

periodically to discuss codings, talk through disagreements, and reach consensus. Once about half of participants' responses were coded, the doctoral advisor reviewed the team's codings and offered feedback. Once the independent coding phase was completed, the frequency and percentage of occurrence of responding for each category was tabulated, and is reported below (See Tables 7-10).

Looking at the qualitative results, the most frequent responses to the question: "Who in your life has had the most positive influence on your body image and relationship with food?"

were: friends (N=155); mother (N=89); romantic partner (N=82); and family (N=74).

The most frequent responses to the question: "Who in your life has had the most negative influence on your body image and relationship with food? were: friends (N=92); mother (N=80); society/media (N=76); family (N=74); and peers (mostly female) (N=58).

Looking at the question of how this person or group of people influenced them, participants' most frequent responses to the question: "What specifically about this person and your relationship with him or her has had a positive influence on your body image and relationship with food?" were: "affirm inner and/or outer beauty" (N=190); and "encourage, model, and/or facilitate healthy eating and exercise" (N=171).

Participants' most frequent responses to the question: "What specifically about this person and your relationship with him or her has had a negative influence on your body image and relationship with food?" were: "criticize, comment on, and/or tease me about my weight, shape, eating, and/or exercise habits" (N=167); and "influence me through preoccupation with their own weight, shape, eating, and/or exercise habits" (N=88).

Table 7. *Participants’ responses to the question: “Who in your life has had the most positive influence on your body image and relationship with food?” N=436*

Who	Frequency (N)	Percentage (%)*
Friend(s) <i>(Female or unspecified)</i>	155	35.6
Mother	89	20.4
Romantic partner	82	18.8
Family <i>(Includes: family, aunt, sister, brother, cousins, grandmother)</i>	74	17.0
Parents	19	4.4
Peer/peer groups <i>(Includes: roommates, teammates, theater group, girl scouts, RA, women’s health groups, Internet support group)</i>	19	4.4
Father	13	3.0
No one/I don’t know	13	3.0
Sociocultural influences <i>(Includes: celebrities, musicians, feminists, “people” who give compliments, Europeans, Internet bloggers)</i>	10	2.3
Friend(s) <i>(Male)</i>	5	1.1
Non-familial adult authority figures/caregivers <i>(Includes: teacher(s), therapist, doctor)</i>	5	1.1
Religious group/figure	3	0.7
Myself	3	0.7

\* Note. Percentages add up to more than 100% because participants’ responses could be coded in more than one category.

Table 8. *Participants’ responses to the question: “Who in your life has had the most negative influence on your body image and relationship with food?” N=434*

Who	Frequency (N)	Percentage (%)*
Friend(s) <i>(Includes: female friends, male friends, friends with eating disorders)</i>	92	21.2
Mother	80	18.4
Society/media <i>(Includes: celebrities, strangers, people I don’t know who judge me)</i>	76	17.5
Family <i>(Includes: family, aunt, sister, brother, cousins, grandparents, grandmother)</i>	74	17.1

Who (con't.)	Frequency (N)	Percentage (%)*
Peers – female or unspecified <i>(Includes: roommates, teammates, acquaintances, other women on campus, greek life)</i>	58	13.4
No one/I don't know	35	8.1
Father	30	6.9
Parents	17	3.9
Romantic partner	13	3.0
Myself	12	2.8
Non-familial adult authority figures/caregivers <i>(Includes: teacher, coach, doctor)</i>	9	2.1
Peers – male <i>(Includes: teasing by boys when younger, male peers who gaze at my thighs)</i>	6	1.4

\* Note. Percentages add up to more than 100% because participants' responses could be coded in more than one category.

Table 9. *Participants' responses to the question: "What specifically about this person and your relationship with him or her has had a positive influence on your body image and relationship with food?" N=378*

How	Frequency (N)	Percentage (%)*
Affirm inner and/or outer beauty	190	50.3
Encourage/model/facilitate healthy eating and exercise	171	45.2
Broadly provide supportive relationship/interactions	45	11.9
Subscribe to attitude that eating is for enjoyment	42	11.1
Receive neither encouraging nor hurtful comments/issues related to body and/or food not discussed	41	11.1
Embrace realistic standards of beauty/show awareness of unrealistic ideals	31	6.5
Relate on issues involving food and weight	15	4.0
Support weight loss and/or gain	13	3.4
Serve as downward social comparison	12	3.2

\* Note. Percentages add up to more than 100% because participants' responses could be coded in more than one category.

Table 10. *Participants’ responses to the question: “What specifically about this person and your relationship with him or her has had a negative influence on your body image and relationship with food?” N=381*

How	Frequency (N)	Percentage (%)*
Criticize/comment on/tease me about my body weight/shape, eating habits, or exercise habits. *	167	43.8
Influence me through preoccupation with their own weight/shape, eating, exercise. *	88	23.1
Portray/idealize images of unrealistically thin, fit, and/or attractive women.	54	14.2
Passive influence – serve as a standard against which I compare myself and feel inferior.	51	13.4
Expose me to unhealthy food, too much food, or set poor example by making unhealthy/overindulgent choices around food.	30	7.9
I criticize myself most harshly (and engage in maladaptive eating patterns)	16	4.2
Criticize/comment on others’ body weight/shape, eating habits, or exercise habits. *	12	3.1
Other: a. Make me feel guilty for my natural thinness. b. Commented on aspects of body image and attractiveness other than weight and shape (e.g., attractiveness of face, pale skin tone)	9	2.4

\* Perceived or explicitly stated.

\*\* Note. Percentages add up to more than 100% because participants’ responses could be coded in more than one category.

### **Additional Analyses**

Post hoc analyses utilizing one-way ANOVAs were conducted in order to test whether there were differences in perceived mutuality, perceived self-silencing, and other key study variables between those participants who met the diagnostic criteria for an eating disorder (“clinical group”), according to their scores on the Eating Attitudes Test – 26 (EAT – 26) (N=71), and those participants who did not (“subclinical group”) (N=380). Analyses revealed that there were differences between the two groups on the following

variables: perceived mutuality (across mother, father, and friends), ( $F(1,449) = 17.10, p < .001$ ); perceived mutuality with mother, ( $F(1,449) = 11.15, p < .01$ ); perceived mutuality with father, ( $F(1,449) = 17.04, p < .001$ ); self-silencing, ( $F(1,449) = 23.23, p < .001$ ); perceived sociocultural pressures for thinness, ( $F(1,449) = 116.41, p < .001$ ); internalization of the thin ideal, ( $F(1,449) = 26.72, p < .001$ ); body dissatisfaction, ( $F(1,449) = 169.33, p < .001$ ); negative affect, ( $F(1,449) = 14.65, p < .001$ ); and poor interoceptive awareness, ( $F(1,449) = 14.65, p < .001$ ). Specifically, the clinical group as compared to the subclinical group scored significantly *higher* on the following variables: self-silencing; internalization of the thin ideal; body dissatisfaction; poor interoceptive awareness; and perceived sociocultural pressures for thinness, and significantly *lower* on the following variables: perceived mutuality (across mother, father, and friends); perceived mutuality with mother; and perceived mutuality with father. Analyses revealed that there were no significant differences between the two groups on social support, ( $F(1,449) = .31, p = .58$ ) and perceived mutuality with friends, ( $F(1,449) = 2.0, p = .06$ ).

## **CHAPTER 6**

### **Discussion**

In this chapter, the current study's findings are presented and discussed. The first two sections discuss the results of the analyses that explored the relationships between perceived mutuality and disordered eating, and between self-silencing and disordered eating. The third section discusses how each of the key variables: perceived mutuality, self-silencing, and disordered eating, related to each other through an analysis of mediation. The fourth section discusses the results of the examination of the multidimensional model. The fifth section discusses similarities and differences between clinical and sub-clinical groups of participants. The sixth section discusses the results of the qualitative analyses. Finally, the implications of this study's findings, possible directions for future research, and the limitations of this study, are discussed.

#### **Perceived Mutuality and Disordered Eating**

As hypothesized, higher levels of perceived mutuality with (1) father, (2) mother, (3) friends, and (4) overall (across father, mother, and friends) predicted lower levels of reported eating disorder symptomatology, and the effect size of each of these regression analyses was small. This means that those participants who reported having relationships characterized by higher levels of the back-and-forth flow of thoughts, feelings, and activity (Genero et al., 1992) reported lower levels of engagement in disordered eating behaviors. These results align with and extend a small body of empirical research, mostly correlational in nature, that has begun to support the relationship between perceived mutuality and disordered eating.

For example, Sanftner and colleagues (2004) explored the association between



perceived mutuality in relationships and friends and disordered eating, and found a negative relationship, even when controlling for depression. Tantillo and Sanftner (2010) also explored the relationship between mutuality and disordered eating in a clinical sample of adolescent girls and women being treated for eating disorders at the outpatient and partial hospitalization levels of care. Results indicated that, overall, higher mutuality scores across relationships with one's mother, father, partner, and friend, were correlated with lower scores on the Eating Disorders Inventory-2 (EDI-2; Garner, 1991). Furthermore, scores on the father, but not mother, perceived mutuality form predicted scores on the Body Dissatisfaction and Bulimia subscales of the EDI-2. Tantillo and Sanftner (2010) noted that this finding calls for further investigation.

The current study's findings extended the literature on perceived mutuality because this is the first time that a total score was used (e.g., an "overall" perceived mutuality score across father, mother, and friend), and calculating the scales in this way yielded robust psychometric properties, and reliable results. While the previous research, cited above, suggested that relationship-specific perceived mutuality (e.g., mutuality with father) may relate to disordered eating outcomes differently, the current study found that the mother, father, friend, and overall version of perceived mutuality were all negatively related to disordered eating, and each effect size was small. This suggests that researchers may be able to use the total score to reduce burden on participants in terms of repeating the same set of questions three times and in conducting more parsimonious analyses.

### **Self-Silencing and Disordered Eating**

As hypothesized, higher scores on self-silencing predicted higher scores on

reported eating disorder symptomatology, and the effect size of this regression analysis was medium. This means that those participants who endorsed higher levels of withholding those emotions, opinions, strengths, and capabilities perceived to be threatening to the maintenance of relationships (Jack, 1991, 1999) also endorsed higher levels of engagement in disordered eating behaviors. These results are in accordance with previous research findings. A small, but growing, body of empirical research has begun to support the theoretical associations between self-silencing and eating disorder symptomatology. For instance, Geller and colleagues (2000) found that women with Anorexia Nervosa, as compared to women without a psychiatric diagnosis, had significantly higher scores on self-silencing, (STSS; Jack & Dill, 1992) even after controlling for depression and self-esteem. Additionally, Wechsler and colleagues (2006) found a positive correlation between score on self-silencing and disordered eating in a sample of college women.

Thus, the relational feminist construct of self-silencing was a robust predictor of disordered eating symptoms in the current study. As the motivations underlying disordered eating behaviors are considered to be interpersonal in nature (e.g., to please others) (Tylka & Subich, 2004), it makes sense that a construct such as self-silencing, which gets at how individuals censor their authentic selves to paradoxically remain connected in relationships, may exhibit a moderately strong relationship with disordered eating symptoms. Additionally, when used in the context of the current study, silencing the self is seen as a maladaptive phenomenon. Future research may wish to explore whether this assumption applies cross-culturally as it is grounded in the values of a Western society.

## **Perceived Mutuality, Self-Silencing and Disordered Eating**

As expected, higher levels of perceived mutuality (composite score across mother, father, and friends) predicted lower levels of perceived self-silencing, and the effect size of the regression analysis was medium. One study was found that explored the relationships between perceived mutuality and self-silencing in a sample of participants with disordered eating symptoms. In this study, Wechsler and colleagues (2006) found a negative relationship between perceived mutuality and silencing the self in a sample of college women. Thus, the results of the current study align with the one previous finding that has been published in the literature. This relationship makes theoretical and intuitive sense. Specifically, experiencing a high level of mutuality in relationships relates to perceiving a sense of competence and to being authentically seen and heard – the antithesis of self-silencing in which individuals perceive their needs as secondary, themselves as less powerful, and keep authentic parts of themselves out of their relationships (Wechsler et al., 2006).

A subset of the above findings set the stage for testing a mediational analysis. Specifically, we explored whether self-silencing mediated the relationship between perceived mutuality and eating disorder symptomatology. While no studies were found that explored whether self-silencing or perceived mutuality act as mediating variables with the outcome variable of eating disorder symptomatology, Whiffen and colleagues (2007) found that self-silencing significantly mediated the relationship between marital conflict and depressive symptoms. While the variables studied by Whiffen et al., (2007) are not the same as those chosen for the current study, the predictor variables, marital conflict and perceived mutuality, both broadly refer to relationship quality. The outcome

variables, depressive symptoms and disordered eating, both refer to negative psychological symptoms. Thus, the current study looked to the result of Wiffen and colleagues' (2007) study to inform the ordering of the variables.

This research question was supported by the data. When self-silencing was added to the model as a mediator, the relationship between perceived mutuality and disordered eating was still significant, indicating a *partial* mediation effect. It is important to examine possible mediation to understand the “why” and “how” of disordered eating. Understanding mediation effects may be especially important in order to advance knowledge of the risk factors for and protective factors against disordered eating, as previous research suggests that a complex set of biopsychosocial mechanisms result in these symptoms. The partial mediation results suggest self-silencing accounts for some, but not all, of the relationship between perceived mutuality and disordered eating. This implies that there may be some direct relationship between the perceived mutuality and disordered eating, and that there may also be other mediating variables that explain the relationship between mutuality and disordered eating.

Previous theory and research may shed light on this finding. The literature suggests that body image (a robust predictor of disordered eating) is a component of the self-concept that emerges through key interpersonal relationships, but little is known about the mechanisms that underlie the connection between the quality of these relationships and body image/eating behaviors (e.g., Iannantuono & Tylka, 2012; Kearney-Cooke, 2002). It may be that having relationships that are non-mutual in nature results in an internalized view that parts of the self cannot be revealed in relationships, and this impacts the development of disordered eating symptoms (e.g., Ackard,

Neumark-Sztainer, Story, & Perry, 2006; Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003).

The above theoretical propositions have been supported through empirical research (e.g., Cash, Theriault, & Annis, 2004; Cheng & Mallinckrodt, 2009; Iannantuono & Tylka, 2012; & Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Scholars have proposed the idea that patterns of self-silencing may develop for individuals as they experience themselves in relationships and internalize relational patterns based on how others respond to them (e.g., Wechsler et al., 2006). Moreover, these relational patterns and ideas about the “self-in-relation” may be tied to disordered eating behaviors as scholars have also suggested that the motivations underlying disordered eating behaviors are considered to be interpersonal in nature (e.g., to please others) (Tylka & Subich, 2004).

### **Multidimensional Model**

**Model I.** Two versions of a multidimensional model of disordered eating symptomatology were tested. In the first model, a simultaneous regression was used to explore whether the following variables would each predict unique variance in disordered eating: sociocultural pressures for thinness; internalization of the thin ideal; body dissatisfaction; negative affect; poor interoceptive awareness; and social support. This model was tested in order to see if the variables included in Tylka and Subich’s (2004) multidimensional model would be supported in the current study. Moreover, the variables included in Tylka and Subich’s (2004) and in the current study fall under each of the three major domains (i.e., sociocultural, personal, and relational) considered necessary in the conceptualization and prediction of eating disorders (e.g., Mintz &

Wright, 1993). This hypothesis was partially supported by the data. Together, the set of predictor variables accounted for 42.1% of the variance in reported eating disorder symptomatology. Not all of the variables predicted unique variance in disordered eating. The variables that did predict unique variance were: perceived sociocultural pressures for thinness; internalization of the thin ideal; and body dissatisfaction. The following variables did not account for unique, significant variance disordered eating: negative affect; poor interoceptive awareness; and social support.

In terms of how these findings fit with previous research, there are multiple factors to consider. For instance, in the Tylka and Subich (2004) study, the sets of sociocultural, personal, and relational variables accounted for 62% of the variance in women's eating disorder symptomatology. A number of factors could explain why Tylka and Subich's (2004) study accounted for more variance in disordered eating – a primary one being the difference in data analytic strategies. The current study used simultaneous regression while Tylka and Subich (2004) used SEM. Characteristic of SEM is the ability to examine direct and indirect effects. Indeed, in Tylka and Subich's (2004) study, not all of the variables within the sociocultural, personal, and relational domains *directly* predicted unique variance in eating disorder symptomatology. Specifically, there were direct paths between the variables of friend social support, body image disturbance, and poor interoceptive awareness to the outcome variable, eating disorder symptoms. There were indirect paths between the variables of pressure for thinness, family social support, negative affect, internalization of the thin ideal to the outcome variable, eating disorder symptoms.

In comparison to SEM, simultaneous regression requires that the predictor and

outcome variables be significantly correlated, and that each predictor variable is not too highly correlated with any of the other predictor variables, in order to obtain unique variance. If the predictor variables are even moderately correlated, they “siphon” off shared variance from one another due to multicollinearity (Tabachnick & Fidell, 1996). For instance, neither neuroticism nor alexithymia made a unique contribution to disordered eating when included in the multidimensional model. Since these two variables were moderately correlated at  $r=.54$ , it is possible that they did not make a unique contribution because of common variance when considered concurrently.

In the current study, we were less interested in the relationships between the predictor variables, and more interested in learning which predictor variables made a unique contribution to eating disorder symptomatology. We wondered how the cohort of variables chosen in the Tylka and Subich (2004) study, per the literature’s suggestion that variables within the sociocultural, personal, and relational domains were all important predictors of eating disorder symptomatology, functioned in the current study’s sample of college women. In our study, the variables that predicted unique variance in eating disorder symptomatology were: perceived sociocultural pressures for thinness; internalization of the thin ideal; and body dissatisfaction. As these variables are the most body- and weight-focused, it is not surprising that they predicted unique variance. In a study of 249 undergraduate women, Twamley and Davis (1999) found that awareness of sociocultural thinness norms, internalization of the thin idea, and body dissatisfaction predicted 50% of the variance in eating pathology, while other factors (e.g., conformity gender role, feminism, past and current family and peer influences, BMI, body fat, waist-to-hip ratio, perceived shape, self-esteem, and perceived control over weight and shape)

added only 14% additional variance. Variables not measured in the current study, such as genetics, developmental history, or other personal factors, may explain additional variance if included.

A second factor that could explain the difference in the amount of variance in disordered eating accounted for between Tylka and Subich's (2004) study and the current study is sample differences. For instance, the current study sampled college women from the entire campus population, while Tylka and Subich (2004) sampled exclusively from psychology students and students who were members of sororities. Furthermore, the current sample was more diverse with students of color comprising 36.6% of the sample, as compared to 21% of Tylka and Subich's (2004) sample. Research is mixed about whether there are individual differences across racial and ethnic groups with respect to the risk factors for and protective factors against disordered eating (e.g., Shaw, Ramirez, Trost, Randall, & Stice, 2004; White, Kohlmaier, Varnado-Sullivan, & Williamson, 2003); thus, this could have played a role in the current study.

A third factor that could explain the difference in the amount of variance in disordered eating accounted for between Tylka and Subich's (2004) study and the current study is the measures used. For instance, since Tylka and Subich (2004) used SEM, they sometimes used two measures of the same, or similar, constructs in order to assess for the latent variable construct. The current study used only one measure for each construct. For example, in order to assess the construct of internalization of the thin ideal, Tylka and Subich (2004) used the Internalization subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (Heinberg et al., 1995) and the Ideal-Body Stereotype Scale-Revised (IBSS-R; Stice, Ziemba, et al., 1996), while the current study used only the latter



measure.

In addition, in some cases, the current study used different instruments than Tylka and Subich (2004) in order to measure the same construct, given prohibitive factors such as cost or lack of availability. For instance, the current study used the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) to measure social support, while Tylka and Subich (2004) used the Friends and Family subscales from the Perceived Social Support Scale (Procidano & Heller, 1983). Furthermore, the current study used the Neuroticism subscale of the Big Five Inventory (BFI; John et al., 1991) to measure the construct of neuroticism, while Tylka and Subich (2004) used the Neuroticism subscale of the NEO-Five Factor Inventory (Costa & McCrae, 1992). These differences in the instruments used could account for some of the difference in the amount of variance in disordered eating accounted for between the two studies.

**Model II.** In the second model a simultaneous regression was used to explore whether perceived mutuality and self-silencing would each predict unique variance in disordered eating when added to the multivariate model outline above. This hypothesis was not supported by the data. Neither perceived mutuality nor self-silencing predicted unique significant variance in reported eating disorder symptomatology when added to the multivariate regression model.

While perceived mutuality and self-silencing have been found to predict disordered eating symptoms outside of the multivariate model (e.g, Tantillo & Sanftner; 2010; Wechsler et al., 2006) as well as in the current study, they did not make a unique contribution when considered as part of a multidimensional model. Again, due to multicollinearity, it could be that some variables share common variance in their

prediction of disordered eating, and as a result, do not contribute unique variance (Tabachnick & Fidell, 1996). It could also be that the relational variables of self-silencing and perceived mutuality and self-silencing do not represent a key risk factor for and protective factor against disordered eating. Instead, perhaps we need to more closely consider the relational influences – at the “macro” and “micro” levels – that are specific to messages and models about weight, shape, eating behaviors, and exercise behaviors. Otherwise stated, while the more “domain-general” relational variables such as social support, perceived mutuality, and self-silencing may demonstrate some significant relationships with disordered eating symptoms, the most powerful relational influences may be “domain-specific,” with the domain being messages and models about weight, shape, eating behaviors, and exercise behaviors.

This above reasoning is supported by the findings of the current study. Specifically, participants’ scores on the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996) contributed the most unique variance to disordered eating symptomatology. This measure assesses for participants’ perceptions of pressures to be thin from significant others (e.g., family, friends, significant others) and the media. However, this scale may not get at all of the facets of “macro-“ and “micro-level” pressures that participants endorsed in the qualitative responses. For instance, the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996) gets at pressure from others to be thin and lose weight, but participants talked about feeling these pressures through a variety of messages – sometimes they heard messages about their weight, but other times it was directly about their eating habits or exercise habits. Moreover, the comments that they heard were not always about themselves – sometimes

these comments were about other people (and it influenced them), and sometimes the person making the comments was making them about themselves (e.g., moms who fixate on their own weight may be provocative for participants). Furthermore, the Perceived Sociocultural Pressures Scale may confound messages from society/media at the “macro-level” and messages from parents, friends, or one’s significant other, at the “micro-level.” These two levels may operate differently, and may benefit from further studies on how they might function separately in the prediction of body image disturbances and disordered eating symptoms.

Consequently, a more nuanced measure that assesses messages from significant people in one’s life may help to parse out these complex influences. There are two measures that have been designed to assess for these influences – the Caregiver Eating Messages Scale (Kroon Van Diest & Tylka, 2010) and the Family History of Eating—Students Scale (Moreno & Thelen, 1993). The former measure gets at caregiver messages and models growing up, but the current study’s findings suggest that a measure may wish to assess for *past* messages and models, as well as *current* messages and models. Additionally, the Caregiver Eating Messages instrument (Kroon Van Diest & Tylka, 2010) assesses for current messages from parental figures, but our research suggests that we should also be exploring messages and models from other significant people, namely friends, peers, and extended family, to name a few. The latter measure assesses for current and past messages, and asks about influences outside of one’s parents, but it is not well-validated, and initial psychometric properties were just adequate. Despite these limitations, Thwamley and Davis (1999) did find that higher degrees of family influence to be thin was a risk factor for higher levels of thin-ideal

internalization, in the presence of lower levels of awareness of thinness norms, in a sample of college students. Future research should focus on developing more valid and reliable measures to assess for “micro-level” influences on internalization of the thin ideal, body dissatisfaction, and disordered eating symptoms.

### **Differences Between Clinical and Sub-Clinical Groups**

Exploratory post-hoc analyses examined whether the data support the continuity hypothesis of eating disorder symptomatology or whether there are statistically significant differences between participants who met the criteria for a possible eating disorder (i.e., “clinical group”) and participants who did not meet the criteria for a possible eating disorder (i.e., “subclinical group”) on each of the variables explored in this study. A series of one-way ANOVAS revealed that there were differences between the two groups on the majority of the variables.

Specifically, participants in the clinical group, as compared to participants in the subclinical group, scored significantly *higher* on: self-silencing; internalization of the thin ideal; body dissatisfaction; poor interoceptive awareness; and perceived sociocultural pressures for thinness, and significantly *lower* on: perceived mutuality (across mother, father, and friends); perceived mutuality with mother; and perceived mutuality with father. Analyses revealed that there were not significant differences between the two groups on social support or on perceived mutuality with friends.

These results align with previous research which suggests that eating-related variables (e.g., depression, disturbances in thinking and eating attitudes, drive for thinness, dietary restraint, and self-esteem) followed an orderly downward progression with those individuals with the most severe disordered eating symptoms scoring the

highest, and those with the least severe symptoms, or no symptoms at all, scoring the lowest (Franko & Omori, 1999; Stice et al., 1996). While the current study did not have more than two levels of eating disturbance to examine, the results of the previous study begin to lend support to the continuity hypothesis, and a further examination of the current study's key variables could be carried out in future research with a measure of eating disorder symptomatology that allows for participants to be divided into more than two groups in terms of level of eating disturbance (e.g., the Q-EDD; Mintz, O'Halloran, Mulholland, & Schneider, 1997). Moreover, these differences suggest the possibility that different models may be needed to more fully understand the risk factors for and protective factors against disordered eating behaviors in clinical versus subclinical groups.

### **Qualitative Findings**

A number of interesting findings arose from the qualitative data. Participants were asked two questions: (1) "Who in your life has had the most positive influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a positive influence on your body image and relationship with food?" and (2) "Who in your life has had the most negative influence on your body image and relationship with food? What specifically about this person and your relationship with him or her has had a negative influence on your body image and relationship with food?"

In regard to who participants named as having had an influence on their body image and relationship with food, there were some notable similarities and differences. Specifically, participants stated that their friends (35.6%), mother (20.4%), romantic

partner (18.8%), and family (17.0%) have had the most positive influence on them, and that their friends (21.2%), mother (18.4%), society/media (17.5%), family (17.1%), and peers (mostly female) (13.4%) have had the most negative influence on them. Thus, looking across the data, participants' responses indicated that their friends, mothers, and family have served as the most important positive *and* negative influences. A small subset of participants indicated that the same person served as the most positive and the most negative influence. As much of the previous research on body image and eating behaviors has focused on the negative aspects of these phenomena (e.g., body dysmorphia, eating disorders) (Iananuntuono & Tylka, 2012), the above qualitative findings add to our knowledge of the *negative and positive* interpersonal and societal influences on body image and eating behaviors.

Some interesting differences also emerged between the person or group of people that participants named as having had influenced them either positively or negatively. For instance, 18.8% participants stated that their romantic partners have had an important positive influence on their body image and relationship with food while only 3.0% of participants stated that romantic partners have had a negative influence. This may be especially notable given that only a subset, just under half (42.7%), of participants reported that they were currently in a relationship, and most participants noted that a current boyfriend, not an ex-boyfriend, influenced them. Thus, compared with the people whom participants overwhelmingly stated have had both positive and negative influences, romantic partners may have a unique role in providing a mostly positive influence. This finding may shed some important light on a relatively unexplored area of research – healthy romantic relationships as a protective factor against disordered eating

in college women. Furthermore, most participants (92%) either specified that their partner was male or did not specify the gender of their partner, while 8% specified that their partner was female. Thus, the fact that healthy romantic relationships emerged as a potential protective factor suggests that many women may have a distorted perception of how thin male romantic partners expect them to be.

Additionally, 17.5% participants stated that society/media (e.g., celebrities) has had the most negative influence on their body image and relationship with food while only 2.3% participants stated that sociocultural factors (e.g., celebrities, musicians, feminists) have had a positive influence. Again, compared with the people whom participants overwhelmingly stated have had both positive and negative influences, participants suggested that society and the media have a unique role in providing a mostly negative influence. This finding is not surprising given the robust body of literature documenting the harmful impact of sociocultural pressures, especially the media, on body image and the development of disordered eating behaviors (e.g., Stice, 1994; Striegel-Moore et al., 1993).

Participants were also asked how their body image and relationship with food were positively or negatively influenced by the person or people that they named. In response to the prompt of how they were positively influenced, participants' responses were most frequently summarized by the following themes: "affirm inner and/or outer beauty" (50.3%) and "encourage, model, and/or facilitate healthy eating and exercise" (45.2%). The following are responses that were coded as the former theme, "He [my father] has always told me I'm beautiful and that men are not attracted to twigs, and really a man should love me for my heart and brain, and not my body shape. He always makes

me feel better about myself,” and “My boyfriend [has] gotten me from wearing a full face of makeup to none at all, and stopped me from skipping meals and such because he’s convinced me that I am beautiful simply the way I am.”

The following are responses that were coded as the latter theme, “My family...the foods we eat at home are much better for me and I feel like I’m eating the right amount to be comfortably full,” and “My mom...is active and healthy and she cooks very good, well-balanced meals.” As has been mentioned, the research on body image and eating behaviors has been heavily slanted towards pathology. Striegel-Moore and Cachelin (1999) and Grogan (2010) have called for scholars to consider adding a focus on positive body image to learn more about not only what prevents body dissatisfaction and disordered eating, but also what enhances favorable and adaptive attitudes about food and one’s body. The qualitative responses gathered through the current study can help expand our understanding of what the interpersonal factors are that may contribute to healthy attitudes and behaviors.

In response to the prompt of how they were negatively influenced, participants’ responses were most frequently summarized by the following themes, “criticize, comment on, and/or tease me about my weight, shape, eating, and/or exercise habits” (43.8%);, and “influence me through preoccupation with their own weight, shape, eating, and/or exercise habits” (23.1%). An example of responses that were coded as the former theme are: “My grandmother...constantly comments on the amount of food I eat, and my weight. For my age, height, and weight, I am average, maybe slightly below where I am supposed to be. I eat a lot because I am always hungry and she has always made me feel guilty about it, saying that the amount I eat is ‘disgusting’ and it is ‘starting to show,’”



and “My mother has been the most negative influence. She cautions me to watch my weight and tells me that I shouldn't get any heavier, and sometimes she squeezes my arms and says ‘Oh, you got fatter.’” These quotes offer clear examples for the cross-generational transmission of concerns about weight.

The following are examples of responses that were coded as the latter theme: “My best friend...is obsessed with food/dieting/being thin and it causes me to be the same way and think badly about my body,” “My mother. We can be talking about something completely unrelated and she will relate it back to weight, and she tells me about what she’s eaten that day nearly every time we talk. I think she thinks she’s being helpful, but she has made me obsessed and preoccupied with my weight since I was 7 years old,” and finally, “My mom – she is very concerned about her weight (even though she really shouldn’t be), expresses a lot of concern over aging and jokingly (but no-so-jokingly) talks about how she wishes she could get plastic surgery, and always talks about dieting.”

These responses may help to broaden our understanding of the helpful and harmful messages about food and weight that college women receive from significant people in their lives, particularly their mothers as compared to their fathers, and their friends. Specifically, participants’ most frequent responses, as coded by the theme of “criticize, comment on, and/or tease me about my weight, shape, eating, and/or exercise habits” (43.8%) have been reflected in such measures as the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996) which assesses participants’ perceptions of pressures to be thin from significant others (e.g., family, friends, significant other) and the media. However, to my knowledge, there are no measures to assess the second most frequent response from participants, namely, that others

negatively influence them through “preoccupation with their own weight, shape, eating, and/or exercise habits.” As this was a very common response from participants, future research may wish to explore it further as a risk factor.

### **Implications and Directions for Future Research**

This section discusses the implications of the results of the current study, and proposes ideas for future research. One theme that emerged in both the quantitative and qualitative findings was this – participants endorsed that messages and modeling at both the “macro” level (e.g., society, media) and the “micro” level (e.g., parents, family, friends) were highly related to their body image and relationship with food. This theme is consistent with previous findings (e.g., Stice, 1994, 2002; Tylka & Subich, 2004) that suggest that sociocultural influences set the contextual stage from which psychological health or distress develop. The current study’s findings suggest that therapeutic interventions, broadly construed (e.g., individual therapy, group therapy, student affairs programming), may want to include a focus on making explicit the messages and modeling that college women have received, both at the macro- and micro- levels, about weight, shape, eating habits, and exercise habits. Bringing awareness to and raising critical consciousness about these messages and models may be an important piece in helping college women to heal their maladaptive feelings, thoughts, and behaviors related to food. As noted, future research is necessary to determine whether this approach is efficacious within a university or therapeutic context.

Additionally, the current study added to our knowledge of the ways in which relationships are connected to disordered eating as risk and protective factors. For instance, participants’ responses to the open-ended questions illuminated *who* in their life

influenced their positive and negative relationships with food and weight, and *how* this person or group of people influenced them. Participants' responses yielded novel findings about the important role that family members, friends and peers, romantic partners, and society play in the transmission of values and beliefs about food and weight. These findings enhanced the current study's quantitative results, and pointed to the importance of exploring messages and modeling from others in preventative and remedial eating disorder interventions. Specifically, given the qualitative results in which numerous participants suggested that friends and mothers have both negative and positive effect, through messages and modeling, on their body image and relationship with food, interventions and further research may wish to target these groups. Furthermore, the mixed methods approach elucidated important themes in the current study, and is recommended for future research.

In terms of future research that could be beneficial to increasing our knowledge of non-disordered eating, and disordered eating symptomatology at the clinical and sub-clinical levels, longitudinal research may be key. This type of research design will allow us to better understand the temporal relationship between variables. As a result, we may be able to better pinpoint whether particular variables may be targeted for intervention most effectively at specific developmental periods or major transitions (e.g., the transition to college). This suggestion for longitudinal research has been echoed by other researchers who are working toward building multivariate path models of the risk and maintenance factors for, and protective factors against, disordered eating symptoms in clinical and subclinical samples (e.g., Stice, 2002; Stice et al., 1996; Tylka & Subich, 2004)

In addition, much of the previous research has been heavily slanted towards preventing or healing negative body image and disordered eating, at the expense of research on promoting positive body image and healthy eating (Grogan, 2010; Striegel-Moore & Cachelin, 1999). Researchers have advocated for future research to focus on positive body image, suggesting that the study of “positive, adaptive, or healthy body image is essential to the future of the field” (Smolak & Cash, 2011, p. 472). Positive body image, and the investigation of what enhances favorable and adaptive attitudes about one’s body, may allow us to better understand how to protect against body dissatisfaction and disordered eating (Grogan, 2010), especially for those who exhibit disordered eating behaviors at the subclinical level, as these individuals are at greater risk than those with healthy eating behaviors for developing full-syndrome eating disorders (Shisslak, Crago, & Estes, 1995). Iannantuono and Tylka (2011) suggest that the knowledge gained from this research can inform interventions designed to help individuals not only decrease their negative or neutral body image, but also increase their positive body image (Iannantuono & Tylka, 2012). The current study attempted to add to this body of literature through the qualitative question that asked participants about who has had the most positive influence on their body image and relationship with food, and how this person or group has influenced them. This question yielded valuable results that can inform future studies on such important constructs as body appreciation (Avalos, Tylka, & Wood-Barcalow, 2005) and intuitive eating (Tylka & Kroon Van Diest, 2013).

### **Limitations**

The present study also has limitations. First, the generalizability of the study’s results may be limited by selection bias. In the current study, selection bias is more

problematic given the low participation rate of the samples recruited through the Registrar's Office's listserv (14.6%). While this estimate is within the range that is considered typical for college student samples recruited in a similar manner (Porter & Umbach, 2006), it is lower than ideal. Furthermore, given the parameters set up by the Registrar's Office, we did not have access to knowing whether any emails that were sent through the listserv email address bounced back, and as such, this response rate is an estimate based on the available data. We also did not have access to any of the specific email addresses. This would have allowed us to target more effective follow-up requests for participation only to those students who had not yet responded. Similarly, for students recruited through psychology classes, the number of students who saw the posting of the study and did not decide to participate cannot be known, and this eliminates the possibility of calculating an accurate response rate. We tried to address the limitations present in the Registrar's sampling technique by sending out two reminders, spaced about two weeks apart, to potential listserv participants. While this did increase the response rate, the third reminder yielded far fewer responses but was sent out concurrent with finals time, and as such, may not have resulted in a considerable yield given the many academic demands on students at the end of a semester.

In addition, we were aware that generalizability might be limited given that participants could self-select to participate in the study for different reasons. On the one hand, students who have struggled with disordered eating could have been more likely than those who have not struggled with this issue to have chosen to participate in the study, leading to overrepresentation in the sample. Alternatively, the study's topic could have been triggering for women with eating disorder symptomatology, especially at more

severe levels, and these women may have chosen not to participate, leading to underrepresentation in the sample. The current study chose to proactively address this limitation by advertising the study as a project exploring young women's relationships and health, rather than as a study exploring "disordered eating." Ultimately, while the response rate was relatively low, the sample demonstrated a range of scores that was similar to other research. Thus, there is no evidence of bias in terms of underrepresentation or overrepresentation of participants with disordered eating behaviors. Additionally, the percentage of students in the current sample who scored at or above a 20 on the EAT (EAT – 26; Garner & Garfinkel, 1979), indicating a high likelihood for the presence of full-syndrome eating disorders, was 15.7%. This is on par with other studies that report positive screens among undergraduate college women to be about 14% (e.g., Eisenberg, Nicklett, Roeder, & Kirz, 2011).

Secondly, the success of the correlational field design is highly dependent on a variety of factors related to internal and external validity (Anderson, Lindsay & Bushman, 1999), in particular, choosing reliable and valid measures (Heppner, Wampold, & Kivlighan, 2008). One strength of the current study is that we sought to explore the meaningfulness of relatively novel constructs such as perceived mutuality and self-silencing within a multidimensional model of eating disorder symptomatology. The results of this study could make a valuable contribution to our understanding of the etiology of disordered eating within a population of young adult women, among whom heightened risk factors exist.

On the other hand, the use of newer instruments to measure these innovative constructs means that other researchers have had less of an opportunity to validate these

measures across many settings and populations. This is especially valuable when it comes to construct validity given that we need to have confidence that instruments are adequately measuring what they claim to be measuring. Initial reliability estimates were strong overall, and the current study carefully explored these properties with the current sample of college students. One of the measures, the Ideal Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996) had an internal consistency estimate of .79. While this value is adequate, it is lower than the estimate cited for the measure in previous studies, .89. As evidenced by similar correlations to key variables as were found in previous studies, this measure appeared to work adequately in the current study’s analyses. Exploratory analyses were conducted to see if removing an item on the Ideal Body Stereotype Scale – Revised (IBSS-R; Stice, Ziemba, et al., 1996) would impact the internal reliability, and in turn, the amount of variance explained. Analyses revealed that removing item 5, “Shapely women are more attractive.” Increased the internal reliability to .81. However, when this abridged scale was used in the simultaneous regression, the amount of variance did not change, nor did the amount of statistically significant, unique variance explained by the items of this scale.

Moreover, the measures chosen were based on self-report. This factor is a limitation because it introduces mono-method bias and response distortions, since participants’ feelings and behaviors were only measured from their perspectives. Self-report measures are vulnerable to errors and biases, and will result in underreporting for individuals who deny the existence of psychological problems (Goodheart, Clopton, & Robert-McComb, 2012; Shedler et al., 1993). Participants’ self-reports of their eating disorder symptoms may be particularly prone to underreporting given the shame often

associated with engaging in disordered eating behaviors (Goodheart et al., 2012). With that in mind, the current study did have a substantial number of participants (N=71; 15.7% of the sample) whose responses on the Eating Attitudes Test (EAT-26; Garner & Garfinkel, 1979) were suggestive of levels symptomatology that may meet the criteria for clinical diagnosis (e.g., a score of 20 or above). Previous researchers have found that between 11% and 17% of college women score at or above 20 (e.g., Prouty, Protinsky, & Canady, 2002; Thome & Espelage, 2004), suggesting that our sample is at least on par with other samples, even if the clinical severity in all samples may be underreported.

Furthermore, looking specifically at the Eating Attitudes Test (EAT-26; Garner & Garfinkel, 1979), there is another limitation of note. One goal of the current study was to explore the nature of possible differences between “clinical” and “subclinical” groups of participants. Per the instructions of Garner and Garfinkel (1979), those participants who scored at or above a 20 on the EAT-26 were considered part of the clinical group, while those who scored below a 20 were considered part of the subclinical group. A limitation here is that some participants within the subclinical group had some disordered eating symptoms within the mild to moderate range of severity, while others are more “non-clinical” in the sense that they have no symptoms. In accordance with previous research, we considered all of these participants to be below a clinical threshold, but the current measure did not allow for us to partition out those participants who have symptoms in mild to moderate range of severity from those participants who have no symptoms at all. Future research may want to explore a way to address this issue and address the need to be able to create three groups of participants as compared to just two.



In summary, scholars have long been trying to understand the complex risk factors for and protective factors against disordered eating. The current study aligned with previous research by supporting the importance of examining sociocultural, personal, and relational factors. The current study extended the existing literature through the inclusion of novel constructs from a feminist, relational-cultural framework, namely, perceived mutuality and self-silencing. This study also deepened the extant literature base by exploring differences between participants with “subclinical” disordered eating behaviors as compared to “clinical” levels of disordered eating on key study variables. Finally, through the use of open-ended questions, the current study broadened our understanding of the ways in which family, friends, romantic partners, and society both positively and negatively influence college women’s body image and relationship with food through messages and modeling.

## Appendix A

### Recruitment Request Document

If you are a college woman who is at least 18 years of age, consider completing a questionnaire designed to explore young women's relationships and health. This study is important because it will advance knowledge regarding the lives of young women, especially college women, and inform counseling interventions to support young women.

The questionnaire should take you about 30-45 minutes to complete and can be accessed by visiting the following web site:

[Website Inserted Here]

We would be very grateful for your participation and thank you, in advance, for your time.

Sincerely,

Sarah Piontkowski, M.A.  
Doctoral Candidate, Counseling Psychology  
University of Maryland, College Park  
[spiontko@umd.edu](mailto:spiontko@umd.edu)

Mary Ann Hoffman, Ph.D.  
Professor, Counseling Psychology  
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## Appendix B

### Informed Consent

<b>Project Title</b>	Contributions of Relational-Cultural Theory Understanding Disordered Eating: The Roles of Mutuality and Self-Silencing
<b>Why is this research being done?</b>	This is a research project being conducted by Sarah Piontkowski, M.A. and Dr. Mary Ann Hoffman from the University of Maryland, College Park. We are inviting you to participate in this research project because you are a woman and are at least 18 years old. The purpose of this research project is to advance knowledge about young women's relationships and health. This study is important because it will advance knowledge regarding the lives of young women, especially college women, and inform counseling interventions to support young women.
<b>What will I be asked to do?</b>	Your participation will involve completing a survey. The survey takes most people approximately 30-45 minutes to complete. The survey will ask questions about your experiences and attitudes relating to your others, yourself, and your body. You are free to end your participation in this study at any time.
<b>What about confidentiality?</b>	We will do our best to keep your personal information confidential. To help protect your confidentiality, (1) your name will not be included on the surveys and other collected data; (2) a code will be placed on the survey and other collected data; (3) through the use of an identification key, the researcher will be able to link your survey to your identity; and (4) only the researcher will have access to the identification key. If we write a report or article about this research project, your identity will be protected to the maximum extent possible.
<b>What are the risks of this research?</b>	There are no known risks associated with participating in this research project. However, feelings may come up for you while filling out some of the measures. If you are interested in locating a psychologist with whom to discuss any of the concerns that may have come up for you while completing this questionnaire, please visit the UMD Counseling Center, the UMD Health Center, <a href="http://helping.apa.org/">http://helping.apa.org/</a> , or call 1-800-964-2000.

**Appendix B (Continued)**

<b>Project Title</b>	Contributions of Relational-Cultural Theory Understanding Disordered Eating: The Roles of Mutuality and Self-Silencing
<b>What are the benefits of this research?</b>	This research is not designed to help you personally, but the results may help the investigators learn more about young women’s relationships and health. We hope that, in the future, other people might benefit from this study through improved understanding of your experiences with these issues.
<b>Do I have to be in this research? May I stop participating at any time?</b>	Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.
<b>What if I have questions?</b>	<p>This research is being conducted by Sarah Piontkowski, M.A. and Dr. Mary Ann Hoffman, Department of Education, at the University of Maryland, College Park. If you have any questions about the research study itself, please contact Sarah Piontkowski at <a href="mailto:spiontko@umd.edu">spiontko@umd.edu</a> or Dr. Hoffman at <a href="mailto:hoffmanm@umd.edu">hoffmanm@umd.edu</a>.</p> <p>If you have questions about your rights as a research subject or wish to report a research-related injury, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) <a href="mailto:irb@deans.umd.edu">irb@deans.umd.edu</a>; (telephone) 301-405-0678. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</p>
<b>Statement of Age of Subject and Consent</b>	<p>Clicking on the link below indicates that:</p> <ul style="list-style-type: none"> <li>○ You are a woman and you are at least 18 years of age;</li> <li>○ The research has been explained to you;</li> <li>○ Your questions have been fully answered; and</li> <li>○ You freely and voluntarily choose to participate in this research project.</li> </ul>

**Website link inserted here**

## Appendix C

### Demographic Questionnaire

Please answer the following questions about yourself.

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

Racial/ethnic background (Mark all that apply):

- \_\_\_\_\_ African American/Black
- \_\_\_\_\_ Asian-American/Pacific Islander
- \_\_\_\_\_ Asian-Indian/Pakistani
- \_\_\_\_\_ Biracial/Multiracial
- \_\_\_\_\_ Hispanic/Latina
- \_\_\_\_\_ Middle Eastern/Arab
- \_\_\_\_\_ Native American/Native Alaskan
- \_\_\_\_\_ White/European American
- \_\_\_\_\_ Foreign National (please specify): \_\_\_\_\_
- \_\_\_\_\_ Other (please specify): \_\_\_\_\_

Year in school:

- \_\_\_\_\_ First-year
- \_\_\_\_\_ Sophomore
- \_\_\_\_\_ Junior
- \_\_\_\_\_ Senior
- \_\_\_\_\_ 5<sup>th</sup> year undergraduate or beyond

Family's household income (before taxes):

- \_\_\_\_\_ Less than 30,000
- \_\_\_\_\_ 30,000-59,999,
- \_\_\_\_\_ 60,000-99,999
- \_\_\_\_\_ 100,000-149,999
- \_\_\_\_\_ 150,000 or higher

Relationship status:

- \_\_\_\_\_ Single
- \_\_\_\_\_ In a relationship
- \_\_\_\_\_ Married
- \_\_\_\_\_ Divorced
- \_\_\_\_\_ Widowed

If you are currently in a relationship, please indicate the gender of your partner:

Male \_\_\_\_\_ Female \_\_\_\_\_

What is your height and weight?

Height \_\_\_\_\_ (in feet and inches)      Weight \_\_\_\_\_ (in lbs.)

**For participants who have been diagnosed with an eating disorder**

(If you have not been diagnosed with an eating disorder, please leave blank.)

What is your diagnosis?

\_\_\_\_\_ Anorexia Nervosa  
\_\_\_\_\_ Bulimia Nervosa  
\_\_\_\_\_ Eating Disorder Not Otherwise Specified (EDNOS)

How long ago were you diagnosed (approximately)?

\_\_\_\_\_ Less than one year ago  
\_\_\_\_\_ One year ago  
\_\_\_\_\_ Two years ago  
\_\_\_\_\_ Three years ago  
\_\_\_\_\_ Four years ago  
\_\_\_\_\_ Five or more years ago

Please rate the severity of your eating disorder symptoms in the past month on a scale of 0-10 where 0 = no symptoms and 10 = extremely severe: \_\_\_\_\_

Please indicate the eating disorder treatments you have received in the past or are currently receiving:

<b>Treatment</b>	<b>Received in the past</b>	<b>Currently receiving</b>
Outpatient individual psychotherapy		
Outpatient group psychotherapy		
Outpatient family therapy		
Intensive outpatient treatment		
Partial hospitalization treatment		
Inpatient hospitalization/residential treatment		

## Appendix D

### Perceived Sociocultural Pressures Scale (Stice, Ziemba, et al., 1996)

Directions: Please choose the response that best captures your own experience:

Responses options are on a scale of 1 to 5 where 1 = “none,” 3 = “some,” and 5 = “a lot.”

1. I've felt pressure from my friends to lose weight.
2. I've noticed a strong message from my friends to have a thin body.
3. I've felt pressure from my family to lose weight.
4. I've noticed a strong message from my family to have a thin body.
5. I've felt pressure from people I've dated to lose weight.
6. I've noticed a strong message from people I've dated to have a thin body.
7. I've felt pressure from the media (e.g., TV, magazines) to lose weight.
8. I've noticed a strong message from the media to have a thin body.
9. Family members tease me about my weight or body shape.
10. Kids at school tease me about my weight or body shape.

## Appendix E

### Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)

Instructions: We are interested in how you feel about the following statements. Reach each statement carefully and indicate how you feel about each statement.

- 1 = Very strongly disagree
- 2 = Strongly agree
- 3 = Mildly disagree
- 4 = Neutral
- 5 = Mildly agree
- 6 = Strongly agree
- 7 = Very strongly agree

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.



## Appendix F

### Connection-Disconnection Scale (Tantillo & Sanftner, 2010)

The Connection-Disconnection Scale has four forms: father, mother, friend, and partner. Three of these forms: mother, father, and friend, will be used in the currently study. The following is the father form of the survey. The other forms are identical to the father form, except that wherever the word “father” appears throughout the survey, it is replaced by “mother,” or “close friend.”

Directions: Please read the vignette below and from the following 12 sentences, circle the **one sentence** that most accurately represents the kind of interaction that **commonly** occurs in your current relationship with your **father**. *Please* read through all 12 sentences before you make a selection.

**Vignette: You begin to tell your father about something difficult or painful that has transpired between the two of you, and he:**

1. Walks away.
2. Changes the subject.
3. Is non-responsive (for example, won't talk until you change the subject).
4. Gets emotionally overwhelmed and shuts down.
5. Physically strikes out at you.
6. Gets defensive or hostile and verbally attacks or blames you.
7. Gets defensive but asks for more clarification regarding what you are talking about
8. Listens and asks for clarification, but:
  - offers nothing about his own response to your concerns and feelings
  - does not convey an understanding of your experience
  - begins to focus on his pain and experience of the problem
  - and/or tries to convince you to change your perspective on things
9. Listens and asks for clarification, but:
  - offers nothing about his own response to your concerns and feelings
  - and, does convey a minimal understanding of your experience
10. Listens and asks for clarification, but:
  - offers nothing about his own response to your concerns and feelings
  - does convey some understanding of your experience
  - but, tells you how you need to see things and how to fix what's gone wrong between the two of you
11. Validates your feelings and:
  - wants to know more about what you are talking about
  - conveys an understanding of your experience
  - apologizes for any role he might have played in upsetting you
  - but, **shares little** in the way of his own thoughts and feelings about what you have said
12. Validates your feelings and:

- wants to know more about what you are talking about
- conveys an understanding of your experience
- apologizes for any role he might have played in upsetting you
- and shares his feelings and thoughts in response to what you have shared

For each item below, circle the **one number** that best represents how **you** would **commonly** feel after an interaction with your father, like the one in the vignette above:

1. \_\_\_ Not have positive energy  
 \_\_\_ Have a slight amount of positive energy  
 \_\_\_ Have some positive energy  
 \_\_\_ Have a moderate amount of positive energy  
 \_\_\_ Have very much positive energy  
 \_\_\_ Have an extreme amount of positive energy
2. \_\_\_ Not empowered at all  
 \_\_\_ Slightly empowered  
 \_\_\_ Somewhat empowered  
 \_\_\_ Moderately empowered  
 \_\_\_ Very empowered  
 \_\_\_ Extremely empowered
3. \_\_\_ Not at all understood  
 \_\_\_ Slightly understood  
 \_\_\_ Somewhat understood  
 \_\_\_ Moderately understood  
 \_\_\_ Very understood  
 \_\_\_ Extremely understood
4. \_\_\_ Not at all tolerant of different opinions/feelings/needs  
 \_\_\_ Slightly tolerant of different opinions/feelings/needs  
 \_\_\_ Somewhat tolerant of different opinions/feelings/needs  
 \_\_\_ Moderately tolerant of different opinions/feelings/needs  
 \_\_\_ Very tolerant of different opinions/feelings/needs  
 \_\_\_ Extremely tolerant of different opinions/feelings/needs
5. \_\_\_ Not at all able to be genuine  
 \_\_\_ Slightly able to be genuine  
 \_\_\_ Somewhat able to be genuine  
 \_\_\_ Moderately able to be genuine  
 \_\_\_ Very able to be genuine  
 \_\_\_ Extremely able to be genuine
6. \_\_\_ No sense of self-worth  
 \_\_\_ Slight sense of self-worth  
 \_\_\_ Some sense of self-worth

- Moderate sense of self-worth
  - High sense of self-worth
  - Extremely high sense of self-worth
7.  No increased knowledge about yourself and your father
- Slightly increased knowledge about yourself and your father
  - Somewhat increased knowledge about yourself and your father
  - Moderately increased knowledge about yourself and your father
  - Highly increased knowledge about yourself and your father
  - Extremely increased knowledge about yourself and your father
8.  No desire to relate more with others in the future
- Slight desire to relate more with others in the future
  - Some desire to relate more with others in the future
  - Moderate desire to relate more with others in the future
  - High desire to relate more with others in the future
  - Extreme desire to relate more with others in the future
9.  Not at all full of life
- Slightly full of life
  - Somewhat full of life
  - Moderately full of life
  - Very full of life
  - Extremely full of life
10.  Not at all able to act on behalf of yourself and what is good for the relationship
- Slightly able to act on behalf of yourself and what is good for the relationship
  - Somewhat able to act on behalf of yourself and what is good for the relationship
  - Moderately able to act on behalf of yourself and what is good for the relationship
  - Very able to act on behalf of yourself and what is good for the relationship
  - Extremely able to act on behalf of yourself and what is good for the relationship
11.  Not at all validated
- Slightly validated
  - Somewhat validated
  - Moderately validated
  - Very validated
  - Extremely validated
12.  Not at all open to different ways of thinking/feeling
- Slightly open to different ways of thinking/feeling
  - Somewhat open to different ways of thinking/feeling

- Moderately open to different ways of thinking/feeling
  - Very open to different ways of thinking/feeling
  - Extremely open to different ways of thinking/feeling
13.  Not at all able to be real
- Slightly able to be real
  - Somewhat able to be real
  - Moderately able to be real
  - Very able to be real
  - Extremely able to be real
14.  Not at all feeling good about myself
- Feeling slightly good about myself
  - Feeling somewhat good about myself
  - Feeling moderately good about myself
  - Feeling very good about myself
  - Feeling extremely good about myself
15.  No understanding of myself and my father
- Slight understanding of myself and my father
  - Some understanding of myself and my father
  - Moderate understanding of myself and my father
  - Very good understanding of myself and my father
  - Extremely understanding of myself and my father
16.  Not at all wanting interactions with others in the future
- Slightly wanting interactions with others in the future
  - Somewhat wanting interactions with others in the future
  - Moderately wanting interactions with others in the future
  - Very much wanting interactions with others in the future
  - Extremely wanting interactions with others in the future

## Appendix G

### The Silencing the Self Scale (Jack & Dill, 1992)

Instructions: Please circle the number that best describes how you feel about each of the statements listed below. If you are not currently in an intimate relationship, please indicate how you felt and acted in your previous intimate relationships, or how you imagine you would act in intimate relationships based on your relationships with others.

- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

1. I think it is best to put myself first because no one else will look out for me.
2. I don't speak my feelings in an intimate relationship when I know they will cause disagreement.
3. Caring means putting the other person's needs in front of my own.
4. Considering my needs to be as important as those of the people I love is selfish.
5. I find it is harder to be myself when I am in a close relationship than when I am on my own.
6. I tend to judge myself by how I think other people see me.
7. I feel dissatisfied with myself because I should be able to do all the things people are supposed to be able to do these days.
8. When my partner's needs and feelings conflict with my own, I always state mine clearly.
9. In a close relationship, my responsibility is to make the other person happy.
10. Caring means choosing to do what the other person wants, even when I want to do something different.
11. In order to feel good about myself, I need to feel independent and self-sufficient.
12. One of the worst things I can do is to be selfish.
13. I feel I have to act in a certain way to please my partner.
14. Instead of risking confrontations in close relationships, I would rather not rock the boat.
15. I speak my feelings with my partner, even when it leads to problems or disagreements.
16. Often I look happy enough on the outside, but inwardly I feel angry and rebellious.
17. In order for my partner to love me, I cannot reveal certain things about myself to him/her.
18. When my partner's needs or opinions conflict with mine, rather than asserting my own point of view I usually end up agreeing with him/her.
19. When I am in a close relationship I lose my sense of who I am.
20. When it looks as though certain of my needs can't be met in a relationship, I

- usually realize that they weren't very important anyway.
21. My partner loves and appreciates me for who I am.
  22. Doing things just for myself is selfish.
  23. When I make decisions, other people's thoughts and opinions influence me more than my own thoughts and opinions.
  24. I rarely express my anger at those close to me.
  25. I feel that my partner does not know my real self.
  26. I think it's better to keep my feelings to myself when they do conflict with my partner's.
  27. I often feel responsible for other people's feelings.
  28. I find it hard to know what I think and feel because I spend a lot of time thinking about how other people are feeling.
  29. In a close relationship I don't usually care what we do, as long as the other person is happy.
  30. I try to bury my feelings when I think they will cause trouble in my close relationship(s).
  31. I never seem to measure up to the standards I set for myself.

## Appendix H

### Ideal Body Stereotype Scale – Revised (Stice, Ziemba, et al., 1996)

Instructions: Please state how much do you agree with these statements:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

1. Slender women are more attractive.
2. Women who are in shape are more attractive.
3. Tall women are more attractive.
4. Women with toned (lean) bodies are more attractive.
5. Shapely women are more attractive.
6. Women with long legs are more attractive.

## Appendix I

Big Five Inventory  
(John et al., 1991)

### How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *remains calm in tense situations*? Please choose the response next to each statement to indicate the extent to which **you agree or disagree with that statement.**

- 1 = Strongly disagree
- 2 = Disagree a little
- 3 = Neither agree nor disagree
- 4 = Agree a little
- 5 = Agree strongly

### I am someone who...

1. Is depressed, blue
2. Is relaxed, handles stress well
3. Can be tense
4. Worries a lot
5. Is emotionally stable, not easily upset
6. Can be moody
7. Remains calm in tense situations
8. Gets nervous easily



## Appendix J

### Body Shape Questionnaire – Revised (Mazzeo, 1999)

Directions: Please indicate how often the following statements are true for you.

- 1 = Never
- 2 = Very rarely
- 3 = Rarely
- 4 = Occasionally
- 5 = Very frequently
- 6 = Always

1. Have you been so worried about your shape that you have been feeling that you ought to diet?
2. Have you noticed the shape of other women and felt that your own shape compared unfavorably?
3. Has being naked, such as when taking a bath, made you feel fat?
4. Has eating sweets, cakes, or other high calorie food made you feel fat?
5. Have you felt excessively large and rounded?
6. Have you felt ashamed of your body?
7. Has seeing your reflection (e.g., in a mirror or a shop window) made you feel bad about your shape?
8. Have you been particularly self-conscious about your shape when in the company of other people?
9. Have you found yourself brooding about your shape?
10. Has seeing thin women made you feel badly about your own shape?

## Appendix K

### Difficulty Identifying Feelings subscale of the Toronto Alexithymia Scale (Bagby et al., 1994)

Directions: Please indicate how strongly you agree with the following statements.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

1. I am often confused about what emotion I am feeling.
2. I have physical sensations that even doctors don't understand.
3. When I am upset, I don't know if I am sad, frightened, or angry.
4. I have feelings that I can't quite identify.
5. I am often puzzled by sensations in my body.
6. I don't know what's going on inside me.
7. I often don't know why I am angry.

## Appendix L

### Eating Attitudes Test - 26

(Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982)

Choose a response for each of the following statements:

- 1 = Never
- 2 = Rarely
- 3 = Sometimes
- 4 = Often
- 5 = Usually
- 6 = Always

1. I am terrified about being overweight.
2. I avoid eating when I am hungry.
3. I find myself preoccupied with food.
4. I have gone on eating binges where I feel that I may not be able to stop.
5. I cut my food into small pieces.
6. I am aware of the calorie content of foods that I eat.
7. I particularly avoid food with a high carbohydrate content (i.e., bread, rice, potatoes, etc.).
8. I feel that others would prefer if I ate more.
9. I vomit after I have eaten.
10. I feel extremely guilty after eating.
11. I am occupied with a desire to be thinner.
12. I think about burning up calories when I exercise
13. Other people think that I am too thin.
14. I am preoccupied with the thought of having fat on my body.
15. I take longer than others to eat my meals.
16. I avoid foods with sugar in them.
17. I eat diet foods.
18. I feel that food controls my life.
19. I display self-control around food.
20. I feel that others pressure me to eat.
21. I give too much time and thought to food.
22. I feel uncomfortable after eating sweets.
23. I engage in dieting behavior.
24. I like my stomach to be empty.
25. I have the impulse to vomit after meals.
26. I enjoy trying new rich foods.

## Appendix M

### Debriefing Form

Thank you very much for participating in this study.

Much of the previous psychological research on body image and eating concerns has focused on exploring aspects of the individual and her world that make her more or less likely to struggle with her weight and food. Less research has looked specifically at how young women's relationship with people to whom they are close (like parents, friends, and romantic partners) might influence the likelihood that they will develop concerns about food and weight. In order to address this gap in our knowledge, the purpose of this study was to explore whether aspects of young women's close relationships place them at risk for or help protect them from concerns about their body and eating.

Please be certain that your responses to the survey will be held in strict confidence, which will not be violated under any circumstances. Due to the ongoing nature of this study, we ask that you kindly not discuss this survey with others. This is important in protecting the quality of the results.

If you would like further information on eating disorders, please visit the Academy for Eating Disorders at [www.aedweb.org](http://www.aedweb.org) or the American Psychological Association at <http://www.apa.org/topics/eating/index.aspx>. If you are interested in locating a psychologist with whom to discuss any of the concerns that may have come up for you while completing this questionnaire, please visit the UMD Counseling Center, the UMD Health Center, <http://helping.apa.org/>, or call 1-800-964-2000.

Please contact us if you have any questions or concerns about your participation in this study. We appreciate your time and effort in assisting us with this important study.

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