

A Predictive Model of Disordered Eating: The Role of Negative Appearance-Based Commentary in Familial and Romantic Relationships

by

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Abstract

A multitude of interpersonal factors have previously been identified within the literature as contributing to the development of disordered eating. However, current literature suggests negative interaction patterns and abuse within familial and romantic relationships play a significant yet non-specific role in this process. Negative experiences specific to food and appearance have emerged as strong mediators between disturbed interpersonal relationships and eating pathology. The purpose of the present study was to extend previous research by testing a predictive model in which the effects of appearance-based commentary within family and romantic relationships would be examined in the development of disordered eating. Using path analyses and multiple regression techniques, family variables (dysfunction and abuse) were positively correlated with disordered eating. Negative maternal commentary was found to fully mediate the relationship between family abuse and disordered eating. Family abuse was also positively correlated with partner abuse. Although partner abuse was positively correlated with disordered eating, negative partner commentary did not mediate the relationship between partner abuse and disordered eating. Findings from the modeling in which all family and romantic relationship variables were included indicated that individuals receiving negative appearance-based commentary from their mothers were more likely to be involved in romantic relationships in which they experience similar negative comments regarding appearance. Also, negative appearance-based

comments from partners did not add to the model's predictive power of disordered eating once accounting for the relationship of family-of-origin effects on disordered eating. Implications for this research are discussed as they relate to the assessment and treatment of disordered eating in young women.

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CHAPTER 1

Introduction

The etiology of disordered eating patterns is widely believed to be a complex interplay between biological, environmental, and psychological variables occurring over the course of an individual's development (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004). Current literature reflects the extensive efforts to investigate the etiology, treatment, and prevention of eating disorders over the last several decades. It is estimated that a woman's lifetime prevalence rate for developing anorexia or bulimia nervosa is 0.5 and 1-3%, respectively, and ranges from 0.5 to 4% for binge eating disorder (American Psychiatric Association, 2013). However, the prevalence for sub-threshold clinical eating disorders has considerably higher prevalence rates (American Psychiatric Association, 2013). These sub-threshold cases of clinical eating disorders are those that encompass the behaviors and attitudes associated with eating disorder diagnoses but do not meet the full diagnostic criteria. In some cases, these disorders have classified as eating disorder not-otherwise-specified (or may currently be classified as other-specified eating disorder or unspecified eating disorder), a diagnostic category that has been found to account for some 40% to 60% of the diagnoses treated within eating disorder clinics (Thomas, Vartanian, & Brownell, 2009). Even when the eating patterns do not meet criteria for a full clinical eating disorder, such as anorexia or bulimia, symptoms have the potential to negatively affect an individual's overall psychosocial functioning (Eddy et al., 2010; Shisslak, Crago, & Estes, 1995). As such, researchers have devoted extensive attention to

understanding the etiology of disordered eating habits not limited to those with clinical eating disorders (Stice, 2002).

Interpersonal Influences on Disordered Eating

The multitude of biological, environmental, and psychological risk factors believed to contribute to the development of disordered eating has grown considerably in the last several decades (Jacobi et al., 2004). However, the construction of theoretical models to organize and more fully understand the role such risk factors play in the development of eating pathology has lagged in the literature (Polivy & Herman, 2009; Stice, 2002). One such perspective that has emerged from examining a host of environmental factors has been to understand the development of disordered eating from an interpersonal framework (Bruch, 1973, 1978; Madison, 1997). Within such a framework, patterns of disordered eating attitudes and behaviors are theorized to originate from within interpersonal relationships, including family, peers, and romantic partners (Wilfley, Pike, & Striegel-Moore, 1997). Messages are transmitted from such relationships via modeling of eating behaviors and/or attitudes held regarding one's appearance (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). The influence of the different relationships on an individual's attitudes and behaviors regarding food can vary considerably depending on the developmental period of the individual (Shomaker & Furman, 2009). In particular, the influence of the family-of-origin on offspring becomes less salient as they age and develop more autonomy (Steiner-Adair, 1989). During such a developmental transition into young adulthood, the influence of peers and romantic partners can become a more powerful force on individuals' views of their body and appearance (Tantleff-Dunn & Gokee, 2004; Worobey, 2002).

Contributions of Family Dynamics

The family has long been implicated in the development of disordered eating in offspring (Silverman, 1997). Researchers within the family literature have attempted to link family factors, such as negative family dynamics and intrafamilial abuse, to the occurrence of maladaptive eating patterns (see review, e.g., Furr & Ross, 2006; Johnson, Cohen, Kasen, & Brook, 2002; Killian, 1994). Numerous types of interactions between family members including emotional bonding, conflict, communication, and the expression of emotions, have been examined in relation to disordered eating (Humphrey, 1986; Laliberte, Boland, & Leichner, 1999; Waller, Slade, & Calam, 1990). Evidence suggests that an association exists between individuals with disordered eating behaviors and negative family dynamics within their family-of-origin (Dare, LeGrange, Eisler, & Rutherford, 1994; Kog & Vandereycken, 1989). Specifically, individuals reporting disordered eating behaviors have traditionally perceived lower cohesion, or emotional bonding amongst their family members (Ackard & Neumark-Sztainer, 2001; Cromley, Neumark-Sztainer, Story, & Boutelle, 2010; Hodges, Cochrane, & Brewerton, 1998). Additionally, such individuals have also reported difficulty in their family maintaining appropriate structure and flexibility during developmental phases (Johnson, Brownell, St. Jeor, Brunner, & Worby, 1997; Kog & Vandereycken, 1985; Lundholm & Waters, 1991). Negative communication patterns have also been found among families with a member reporting disordered eating patterns (Humphrey, 1989; Miller-Day & Marks, 2006). Lastly, families have also been marked by significantly higher level of conflict between members in which a child exhibits disordered eating patterns (Johnson & Flach, 1985; Lee & Lee, 1996; Wilksche & Wade, 2010).

Despite such significant findings linking problematic family dynamics and disordered eating, contradictory evidence against such a link also exists (see le Grange, Lock, Loeb, & Nicholls, 2010). Inconsistencies across studies are often attributed to significant methodological differences with respect to design, operational definitions of constructs, and populations (clinical vs. non-clinical). Moreover, majority of studies within this literature base have been correlational in nature such that findings have not lead to clear conclusions regarding the true nature of the relationship between family dynamics and unhealthy eating behaviors (Jacobi et al., 2004).

Contributions of Family Abuse

A considerable body of literature exists regarding the long-term psychiatric adjustment of individuals experiencing abuse during childhood and adolescence (Rodgers et al., 2004; Thompson, Arias, Basile, & Desai, 2002). Childhood abuse has been associated with an increased risk of experiencing various psychiatric difficulties, including mood disorders (Giaconia et al., 1995), anxiety disorders (Felitti et al., 1998), and personality disorders (Afifi et al., 2011). Childhood abuse has also been investigated within the context of eating pathology (Neumark-Sztainer, Story, Hannan, Beuhring, & Resnick, 2000; Smyth, Heron, Wonderlich, Crosby, & Thompson, 2008).

Although researchers have traditionally investigated the effects of single forms of childhood abuse to the exclusion of other forms of abuse, forms of childhood abuse rarely occur in isolation (Centers for Disease Control, 2010; Dong et al., 2004). Critics of the single abuse approach have argued that conclusions drawn from such studies are incomplete, as they lack the heterogeneity commonly found with childhood abuse experiences (Messman-Moore & Garrigus, 2007; Neumark-Sztainer et al., 2000).

Findings from studies that have investigated the simultaneous occurrence of multiple forms of childhood abuse (sexual, physical, and emotional) suggest that multiple forms yield greater power in predicting long-term psychiatric adjustment than single forms (Bagley, 1996; Lange et al., 1999). This same trend has been found with disordered eating. Specifically, a dose-response relationship has been noted between multiple forms of childhood abuse and disordered eating (Messman-Moore & Garrigus, 2007).

Sexual abuse has received the most attention from researchers with regard to a theoretical understanding of its association with disordered eating. Specifically, researchers have characterized disordered eating behaviors (e.g., bingeing, purging, fasting, etc.) as a means to cope with difficult emotions associated with sexual trauma (Root, 1991). Similarly, the development of disordered eating behaviors following sexual trauma has also been framed as a means to negatively alter appearance to discourage sexual attention and to prevent future trauma (Wonderlich, Brewerton, Jolic, Dansky, & Abbott, 1997). However, findings have generally failed to establish a consistent empirical link between disordered eating and sexual abuse (Anderson, LaPorte, & Crawford, 2000; Kennedy, Ip, Samra, & Gorzalka, 2007; Williams & Gleaves, 2003). Several authors attribute the inconsistent findings to methodological problems across the childhood sexual abuse-disordered eating literature (Wonderlich et al., 1997). Such methodological problems include varying research designs, sample and control group make-up (clinical vs. community samples), operational definitions of abuse, and outcome measures. Thus, the conclusions that can be drawn regarding the precise role of sexual abuse in the development of eating disorders or disordered eating is limited.

Associations between physical abuse and disordered eating have also produced mixed findings within the literature. Although experiences of childhood physical abuse have been linked to an increase in disordered eating attitudes in individuals diagnosed with clinical eating disorders in one study (Treuer, Koperdak, Rozsa, & Furedi, 2005), investigations with non-clinical (undergraduate) samples do not reveal a relationship between physical abuse and disordered eating (Kennedy et al., 2007).

Emotional abuse has also been examined in relation to disordered eating, and it was found to predict disordered eating behaviors above and beyond sexual and physical abuse (Kennedy et al.; 2007 Rorty, Yager, & Rossotto, 1994). Theoretical models have been postulated to possibly account for the relationship between emotional abuse and disordered eating, such that emotional abuse operates as one component in a multifactor model of eating pathology (Kent & Waller, 2000). Emotional abuse in childhood is theorized to increase an individual's vulnerability to psychiatric symptomatology in adulthood. The mechanism underlying the development of symptoms is believed to be a poor self-concept and inability to appropriately regulate strong emotions. Through interactions with an unhealthy or dysfunctional home environment, the specificity of the resulting pathology leads to disordered eating behaviors. However, researchers within the childhood emotional abuse-disordered eating literature have yet to establish consistent empirical links. Due to the inconsistencies noted within the child abuse literature regarding the role of abuse in the development of eating pathology, forms of childhood abuse have generally been regarded as non-specific factors with low to medium potency in the development of disordered eating (Jacobi et al., 2004).

Role of Appearance-Related Commentary Within the Family

In light of the non-specific role that family dynamics and abuse play in the development of disordered eating, some researchers examined more specific factors, including negative commentary or teasing by parents related to their children's weight, appearance, or eating habits, that may account for the relationship between family environment and disordered eating (Annus, Smith, Fischer, Hendricks, & Williams, 2007; Haines, Kleinman, Rifas-Shiman, Field, & Austin, 2010; Kichler & Crowther, 2001). In fact, "domain-specific" family commentary has been found to have greater predictive ability than general family criticism (Baker, Whisman, & Brownell, 2000; Crowther, Kichler, Sherwood, & Kuhnert, 2002). Moreover, qualitative investigations of discourse in the home of individuals with a history of disordered eating behaviors have revealed strong themes of parental commentary regarding the appearance of both the parent and offspring (Haworth-Hoepfner, 2000; Mellin, Neumark-Sztainer, Patterson, & Sockalosky, 2004). Discourse within the home that takes the form of teasing by parents has also been shown to have a strong relationship with unhealthy eating behaviors in offspring (Annus et al., 2007; Baker et al., 2000; Kluck, 2010).

Contributions of Romantic Partners

Romantic partners have the ability to exert considerable influence on the way in which one perceives their appearance (Tantleff-Dunn & Gokee, 2004), particularly as the desire to be found physically attractive by one's partner is unique dynamic to romantic relationships (Thompson et al., 1999). However, the role of romantic partners in the development of disordered eating has received little attention in the literature compared to that of familial and peer relationships (Ambwani & Strauss, 2007). Researchers have

previously attempted to understand the romantic partners-disordered eating link in context to unhealthy or abusive romantic relationships (Morrison, Doss, & Perez, 2009; Pole, Crowther, & Schell, 2004). Findings from adolescent dating literature indicate that experiencing physical or sexual violence increases an individual's chances of engaging in purging behaviors by 6 to 13% after controlling for problematic family dynamics (Thompson, Wonderlich, Crosby, & Mitchell, 2000). Such results were also congruent with a large population-based sample of adolescent females (Ackard & Neumark-Sztainer, 2002). Individuals experiencing physical and sexual violence perpetrated by their romantic partner were nearly four times as likely to engage in weight restrictive techniques as individuals not experiencing dating violence (Ackard & Neumark-Sztainer, 2002). However, results from the adult literature regarding the role of sexual violence in the development of disordered eating have been more mixed (Dansky, Brewerton, Kilpatrick, & O'Neill, 1997; Fischer, Stojek, & Hartzell, 2010). Because research methods used with adults often do not include a mechanism to control for individuals' experiences of childhood abuse, or delineate the relationship to the perpetrator (i.e., stranger vs. romantic partner; Garfinkel et al., 1995), it is difficult to draw conclusions within the partner abuse-disordered eating literature. Thus, the role of partner abuse (sexual, physical, and emotional) in the development of disordered eating in young women remains unclear.

Role of Appearance-Related Commentary Within Romantic Relationships

The role of negative feedback regarding one's appearance from a romantic partner in the development of disordered eating is not well understood, as it has not received significant attention in the literature (Boyes, Fletcher, & Latner, 2007). Romantic

relationships are unique compared to that of other close relationships, as partners often reveal vulnerabilities and intimate details not typically shared with others. Within the context of this relationship, romantic partners have the potential to wield considerable influence on the other partner's level of satisfaction with their body through verbal and non-verbal messages (Tantleff-Dunn & Gokee, 2004). Verbal messages in the form of negative appearance-related commentary is likely to have a deleterious effect on the formulation of one's beliefs and attitudes about their physical appearance, particularly in light of the unique dynamics involved in romantic relationships (Cash, Theriault, & Annis, 2004).

Purpose

Researchers have previously examined the role of interpersonal factors in the etiology of disordered eating. However, current evidence suggests that problematic interaction patterns and experiences of abuse within familial and romantic relationships play a significant yet non-specific role in the development of disordered eating in young women (Crowther et al., 2002; Laliberte et al., 1999). The lack of specificity of such problematic interactional patterns suggests the inclusion of possible domain-specific variables, such as negative appearance-based commentary, to account for the development of eating pathology (Leung, Schwartzman, & Steiger, 1996).

The purpose of this study was to test a theoretical model for the development of disordered eating through negative appearance-related comments in the context of interpersonal relationships. Within the family, research has indicated a significant relationship between negative interactional patterns (such as, those related to poor bonding or extreme levels of emotional expression among members) and harsh

commentary directed at offspring regarding appearance or weight (Higgins & McCabe, 2000). That is, a dysfunctional family environment is believed to lay a foundation upon which more extreme or harmful forms of dysfunction, such as child physical, sexual, or psychological abuse, are more likely to occur,.

In fact, research indicates a relatively high co-occurrence between forms of familial abuse and dysfunctional family dynamics (Brown, Cohen, Johnson, & Smailes, 2000; Messman-Moore & Brown, 2004). Although causality cannot be inferred with regard to the relationship between familial abuse and dysfunctional dynamics (Meyerson, Long, Miranda, & Marx, 2002), it stands to reason that some level of dysfunction exists within families in which child abuse is perpetrated by parents or caretakers. Within the context of an abusive family environment, one could predict the emergence of negative or hostile discourse among family members, such that negative appearance-related commentary is more likely to occur. Although this specific form of negative commentary is not exclusive to abusive families, it could explain how pathological eating behaviors develop in offspring, as opposed to other forms of psychopathology (e.g., substance abuse).

Less is known about the influence of partner abuse within intimate partnerships on the development of disordered eating. In fact, few studies to date have investigated the link between disordered eating and abuse within the context of a romantic relationship (Morrison et al., 2009). However, similar to the manner in which familial abuse can create an environment in which negative appearance-related commentary can emerge, a parallel process might also be observed within romantic relationships. Negative appearance-related commentary could provide the specificity in the relationship between

an abusive romantic relationship and the development of eating pathology. Thereby, negative appearance-based commentary serves as the specific variable in the development of disordered eating patterns within both familial and romantic relationships.

Findings from the partner abuse literature suggest a strong association between childhood abuse and subsequent revictimization in later life within the context of an intimate relationship (Bensley, Van Eenwyk, & Simmons, 2003). Therefore, inclusion of the familial and romantic relationship variables in the same theoretical model was warranted to test how such variables relate to one another as they relate to the development of eating pathology; that is, with negative appearance-based commentary serving as the specific factor in the development of disordered eating patterns.

Operational Definitions

Significant key terms to the present study were operationally defined as follows:

1. Family dysfunction is operationally defined as the amount of emotional connectivity shared amongst the individual family members (Olson & Gorall, 2003). Family dysfunction was measured by the balanced cohesion subscale of the *Family Adaptability and Cohesion Evaluation Scales-IV* (FACES-IV; Olson, Gorall, & Tiesel, 2007).
2. Family abuse is operationally defined as sexual abuse, physical abuse, psychological abuse, neglect, or exposure to interparental violence occurring before the age of 18. Each form of childhood abuse was operationally defined, as measured by the *Computer Assisted Maltreatment Inventory* (CAMI; DiLillo et al., 2010).

3. Sexual abuse is defined as experiencing any type of hands-on sexual act that varies in severity (e.g., inappropriate touching, kissing, fondling, or oral, anal, or vaginal intercourse) but occurred against their will, with a family member, or with someone five or more years older. If sexual acts occurred with a non-family member occurred while the participant was 14-17 years of age, it was classified as sexual abuse if the perpetrator was at least 10 or more years older (regardless of consent).
4. Physical abuse is defined as a physically aggressive act perpetrated by an adult caregiver. Acts of physical abuse range from being spanked hard, kicked, and choked to being threatened with a weapon (e.g., gun or knife).
5. Psychological abuse is defined as denying emotional responses, terrorizing/spurning behavior, and encouraging corruption by an adult caregiver.
6. Neglect is defined as not attending to basic or medical needs, cleanliness, abandonment, or providing adequate supervision by an adult caregiver.
7. Exposure to interparental violence is defined as any physically aggressive act between parents or adult caregivers in which the child witnessed the act directly, was in close proximity to the act but did not witness it, or learned about the act at a later time.
8. Negative maternal commentary is operationally defined as critical or teasing comments related to weight or general appearance, as well as an encouragement to diet and exercise for appearance control purposes. Negative maternal commentary was measured by the negative maternal commentary

subscale of the *Family Experiences Related to Food Questionnaire* (FEFRQ; Kluck, 2008).

9. Partner abuse is operationally defined as threats (including mild, moderate and serious threats) and actual acts of physical violence (including mild, minor, moderate, and serious acts). Threats of physical violence range from threatening facial gestures, threats to harm property, and threats with a weapon. Actual acts of physical violence range from being pinned down, slapped, choked, and assaulted with a weapon. Partner abuse was measured by the threats of physical violence and actual physical violence subscales of the *Severity of Violence Against Women Scales* (SCAWS; Marshall, 1992).
10. Negative partner commentary is operationally defined as critical or teasing comments related to weight or general appearance. Negative partner commentary was measured by the negative shape and weight subscale of the *Verbal Commentary on Physical Appearance Scale* (VCOPAS-P; Carriere & Kluck, 2014).
11. Disordered eating is operationally defined as attitudes and behaviors associated with clinical eating disorders that do not necessarily meet full diagnostic criteria. Disordered eating attitudes are defined as a preoccupation with weight and dieting, fear of gaining weight, and dissatisfaction with general appearance and specific body areas (e.g., thighs, stomach). Disordered eating behaviors are defined as periods of uncontrollable eating (i.e., binge eating), as well as eating in response to emotional distress. Disordered eating was measured by Eating Disorder Risk scale (comprised of three subscales,

including, drive for thinness, bulimia, and body dissatisfaction) from the *Eating Disorder Inventory – III* (EDI-III; Garner, 2004).

Research Hypotheses

1. Family dysfunction will be associated with higher levels of disordered eating symptomatology.
2. Family abuse will be associated with higher levels of disordered eating symptomatology.
3. Negative family commentary regarding appearance will mediate the relationship between familial abuse and disordered eating.
4. Family abuse and negative family commentary regarding appearance will mediate the relationship between family dysfunction and disordered eating.
5. A childhood history of family abuse will be associated with experiencing higher levels of partner abuse within a romantic relationship as an adult.
6. Partner abuse will relate to disordered eating.
7. Partner commentary regarding appearance will mediate the relationship between partner abuse and disordered eating.
8. Family dysfunction will influence disordered eating through abusive relationships in the form of negative commentary regarding appearance from family and romantic partners.

Significance

The prevalence of disordered eating occurs within young women at alarmingly high rates in the U.S. and has the potential to cause a deleterious impact on their physical, psychological, and social functioning (Eisenberg, Nicklett, Roeder, & Kirz, 2011). As

such, mental health clinicians need to be prepared to adequately treat individuals with this constellation of behaviors. The value of investigating a predictive model of disordered eating that relies upon cross-sectional correlational design serves the treatment community by alerting practitioners to particular familial or interpersonal variables that may be comorbid with disordered eating. Therapeutic consideration of these variables may be paramount to treatment success for some individuals with eating disorders in which a causal relationship exists. As such, identifying psychological concerns that may co-occur with disordered eating can help alert treatment providers of other potential concerns that warrant specific exploration with the client. This line of research also can aid policymakers in the construction and implementation of primary and secondary prevention strategies aimed at identifying individuals and families at risk (Wilfley, Agras, & Taylor, 2013). Thus, research that tests a complex etiological model in the development of disordered eating, may help in identifying ways to possibly prevent sub-threshold levels of disordered eating from developing into clinical eating disorders (Jacobi et al., 2004).

CHAPTER 2

Family Influence on Disordered Eating

Family Dysfunction & Disordered Eating

Historical roots. The role of the family has long been implicated in the etiology and maintenance of disturbed eating behaviors (Gull, 1874, as cited by Madden, 2004). Systems theorists have identified the presence of negative interactions amongst the family unit as the primary factor facilitating the development of pathological eating behaviors in offspring (Rosman, Minuchin, Baker, & Liebman, 1977; Rosman, Minuchin, & Liebman, 1975; Selvini-Palazzoli, 1988). However, the prominence of such a systems framework in conceptualizing the origin of eating disorders was not observed until the 20th century. It was during this period of time that systems theorists began applying their constructs and theories to understanding psychological phenomena, including clinical eating disorders (Minuchin, Rosman, & Baker, 1978).

A physiological conceptualization of eating disorders was the prominent viewpoint for nearly three centuries, as English physician, Richard Morton, is largely credited with first describing abnormal eating behaviors in 1689 (Pearce, 2004). His writings described a young woman with an extreme restricting form of disordered eating in which the woman appeared to have a “wasting of the body” and refused all food. Nearly two centuries would elapse until this clinical description would be developed more fully by another English physician, Sir William Gull, in 1874. He diagnosed the

condition first written about by Morton as ‘anorexia nervosa.’ Morton’s clinical description provided the medical community with a basis for understanding associated symptoms of a restricting form of an eating disorder and forming present-day diagnostic criteria. And it was the medical model that dominated the understanding of eating pathology until the mid-20th century. Although vague references were cited in limiting the role of parents in the treatment of anorexia, Gull did not write further regarding the significance of the family in the development of pathological eating (Madden, 2004).

Case studies steadily emerged during the early to mid-twentieth century and descriptions of pathological eating in patients were largely consistent with the psychoanalytic and psychodynamic theory that dominated the field at the time. Moreover, the analyses of the eating disordered patients were consistent with medical formulations of the disorders formed nearly three centuries prior. However, by the mid-20th century, researchers were beginning to form hypotheses regarding the etiology of eating disorders (Polivy & Herman, 2002), and interpersonal (Bruch, 1973, 1978) and systems frameworks for understanding eating disturbances emerged. The growing theoretical constructs and theories within the marriage and family therapy field were the catalyst for Salvador Minuchin’s conceptualization of psychosomatic families (Minuchin et al., 1978).

Systems conceptualization of eating disorders. In their seminal work on the etiology of psychosomatic diseases, Minuchin et al. (1978) wrote extensively on their clinical work with families affected by a child’s medical illness. Chronic medical conditions (i.e., diabetes, asthma, and anorexia nervosa) were assumed to have an underlying psychological component that served to worsen and even perpetuate the

physical symptoms in the children. Furthermore, such psychological forces operating within the family were also believed to contribute to overall poor family functioning. Based on clinical observations, Minuchin and colleagues identified four common characteristics that were typically found among poorly functioning family units with a diabetic, asthmatic, or anorexic child. These characteristics were theorized to operate interpersonally from within the system of the family, and not within individual family members. Consistent with a systems perspective, problematic interactional dynamics among family members also serve a functional purpose by maintaining the child's symptoms. That is, the family unit is able to avoid other sources of conflict by focusing all of their attention on that of the child (Harding & Lachenmeyer, 1986).

The four problematic dynamics identified by Minuchin et al. (1978) included, enmeshment, overprotectiveness, rigidity, and lack of conflict resolution. Enmeshment is defined as poorly defined boundaries amongst family members that consequently lead to weakened autonomy of individual members and of various subsystems within the family. Enmeshed families are also characterized by excessive togetherness and a lack of privacy among family members. The second dynamic, *overprotectiveness*, is defined as an overabundance of nurturance in the family unit and a heightened sensitivity to emotional distress. *Rigidity*, the third dynamic, represents the family unit's difficulty in adapting rules, boundaries, or interactions due to a strong adherence to the status quo. The fourth dynamic, *lack of conflict resolution*, represents a difficulty within the family to appropriately identify and implement healthy strategies to resolve family conflicts; such an approach to conflicts diminishes the ability of offspring to develop a strong sense of self and independence from the family. Thus, according to Minuchin's theory, the

“anorexic” family operates by way of overly involved and protective relationships, an emphasis on maintaining the status quo, and avoiding conflict.

Early attempts to empirically validate the psychosomatic family model utilizing behavioral observations and self-report questionnaires (such as the *Family Adaptability and Cohesion Evaluation Scales*; Olson, Sprenkle, & Russell, 1979) among eating disorder inpatients were met with some initial success (Kagan & Squires, 1985; Kog, Vertommen, & Degroote, 1986). However, subsequent attempts to validate the model were not as successful (Dare et al., 1994; Humphrey, 1989) despite attempts to reformulate operational definitions of the original dynamics central to the model (i.e., enmeshment, rigidity, overprotectiveness, and lack of conflict resolution; Kog, Vertommen, & Vandereycken, 1987).

In the two decades immediately following Minuchin’s etiological theory of anorexia, investigations into the occurrence of disordered eating symptomatology within the context of the family became abundant in the eating disorder literature. Namely, researchers investigated a significant number of family process variables as they relate to disordered eating patterns, including conflict, boundaries, cohesion, communication patterns, expectations, and emotional expression among family members (Humphrey, 1986; Laliberte et al., 1999; Waller et al., 1990). Findings from epidemiological, case and cross-sectional studies during those decades led researchers to theorize that unhealthy familial dynamics play a role in the development and maintenance of disordered eating patterns (Dare et al., 1994; Garfinkel et al., 1983; Kog & Vandereycken, 1989).

Cohesion. The degree of bonding and relating to one another within the family unit has long been investigated within the disordered eating-family dynamic literature.

Researchers generally view cohesion as one barometer of overall family functioning, as it represents the degree of emotional bonding amongst individual family members (Franko, Thompson, Bauserman, Affenito, & Striegel-Moore, 2008). The construct was originally proposed by Olson et al. (1979) as part of the Circumplex Model of family systems.

Within the circumplex model, cohesion is operationalized on a continuum with either end representing an extreme or unhealthy form of functioning. The middle of the continuum represents an optimal balance of emotional bonding within the family. Cohesion at either extreme represents either a disengaged or an enmeshed degree of bonding among family members. For example, a family unit marked with such disturbed interactional patterns is said to influence their children's eating behaviors through direct verbal persuasion (e.g., to eat specific items or not) or indirectly as a role model (Kog et al., 1987).

In one of the first examinations of cohesion and disordered eating among individuals in an eating disorder day treatment program, researchers found that as patients' disordered eating behaviors worsened, perceptions of their family-of-origin became more dysfunctional (Wisotsky et al., 2003). This finding was robust across all three diagnosed groups of eating disorder patients, including anorexia, bulimia, and eating disorder not-otherwise-specified. In fact, this relationship has also been noted in outpatient eating disorder patients seeking treatment (Bonne et al., 2003; Hodges et al., 1998).

Within non-clinical populations, researchers have also found a relationship between less cohesive families and increased disordered eating behaviors. In a recent descriptive study, researchers found such a link between problems with cohesion and disordered eating behaviors in an adolescent population of individuals classified as either overweight or obese (body mass index \geq 85th percentile for gender and age), who did not

have formal diagnoses of eating disorders (Cromley et al., 2010). Specifically, findings across studies indicate that the more disengaged the family unit is perceived, the more the adolescents engaged in episodes of binge eating (Celio et al., 2004). Lower levels of emotional bonding among family members has also been investigated within the context of specific unhealthy eating behaviors; that is, children that perceive their families as disengaged have been found to drink significantly more soda and eat less fruits and vegetables (Franko et al., 2008). Conversely, children from families marked by extremely high levels of cohesion (i.e., enmeshed) have also been found to engage in overeating compared to children from healthier functioning families (Hasenboehler, Munsch, Meyer, Kappler, & Vogele, 2009). This pattern of association between disordered eating and families characterized at extreme ends of the cohesion spectrum has been replicated with other descriptive and cross-sectional studies examining non-clinical populations, such as university students (Ackard & Neumark-Sztainer, 2001; Johnson & Flach, 1985; Pauls & Daniels, 2000).

Adaptability. Another construct central to the functioning of the family unit, adaptability, has also been widely investigated within the context of disordered eating (e.g., Hoste, Hewell, & le Grange, 2007; Johnson et al., 1997; Lundholm & Waters, 1991). As part of the original Circumplex Model of family systems (Olson, Russell, & Sprenkle, 1979), adaptability has been defined as the ability of the family unit to alter its structure, rules, or role relationships in the face of adversity or evolving life cycles of the family. Adaptability, or flexibility, of the family can be characterized along such unhealthy forms as too rigid or chaotic as well as the family's tolerance of change (Vidovic, Juresa, Begovac, Mahnik, & Tocilj, 2005). Within the eating disorder literature,

unhealthy forms of adaptability within a family have been theorized to play a number of roles in the development of disordered eating attitudes and behaviors. That is, chaotic families, which are characterized by maintaining too little structure during situational or developmental events, could lack the ability to maintain consistency in healthy eating patterns during stressful times. Conversely, families at the other extreme on the adaptability dimension could exhibit too much structure such that rules regarding meals and food are unable to account for changing developmental periods within the family (Johnson et al., 1997).

Among clinical populations, individuals diagnosed with anorexia and bulimia have been shown to report unhealthier forms of adaptability within their families-of-origin (Bonne et al., 2003; Kog et al., 1986; Vidovic et al., 2005) relative to individuals in control groups (i.e., college women; Lundholm & Waters, 1991; Moreno, Seibly, Aved, & Besse, 2000). Intragroup comparisons among populations with diagnosed eating disorders also indicate that significant differences emerge with regard to levels of family adaptability. That is, individuals marked by more restrictive symptoms often report higher levels of rigidity within their families, whereas individuals with more binge or purging symptoms report families marked by chaos (Levy & Hadley, 1998; Kog & Vandereycken, 1985). Links between disordered eating behaviors and being from a family characterized at falling at the extreme ends of the adaptability continua have also been reported in non-clinical populations (Cromley et al., 2010; Kagan & Squires, 1985).

Communication. Negative communication patterns amongst family members have also emerged as a correlate of disordered eating within the literature (Botta & Dumlao, 2002; Killian, 1994; Rieves & Cash, 1996). Specifically, researchers have

investigated the connection between general communication skills and the ability to resolve conflicts within the family; particularly as communication is often conceptualized as both the cause and vehicle for resolving conflicts within the family (Botta & Dumlao, 2002). Underlying overt discourse between parents and offspring, researchers have also investigated how verbal interactions amongst members can create an environment in which offspring can assert their autonomy and independent views (Miller-Day & Marks, 2006). Furthermore, the ability of mothers and fathers to create an open relationship in which offspring feel comfortable discussing important matters with them has been shown to be a protective factors for disordered eating behaviors in non-clinical adolescent females (Fonseca, Ireland, & Resnick, 2002).

To investigate negative communication patterns among families of individuals with eating disorders, Humphrey (1989) analyzed 10-minute verbal exchanges between mother-daughter and father-daughter dyads. Results indicated that eating disorder families, specifically the mother-daughter dyad, were clearly differentiated from control families by their use of negative forms of communication (e.g., contradictory, patronizing, neglectful, etc.), and associated with higher disordered eating symptoms in offspring. Additional studies have also found similar negative communication patterns between father-daughter dyads; specifically, themes of perfectionism and conformity embedded in fathers' verbal interactions with their daughters has been found to be predictive of disordered eating behaviors (Miller-Day & Marks, 2006). In another study investigating the communication between father-daughter dyads, the lack of verbal assertiveness with fathers was linked with a high likelihood that daughters would engage

in disordered eating behaviors (namely, restrictive eating behaviors; Botta & Dumlao, 2002).

Conflict. Conflictual relationships within the family have long been associated with etiology and maintenance of disordered eating symptoms, particularly as disturbed eating patterns relate to clinical symptoms of bingeing and purging behaviors (Kog et al., 1987; Ordman & Kirschenbaum, 1986; Root, Fallon, & Friedrich, 1986; Johnson & Flach, 1985). The relationship between disordered eating symptoms and a conflictual home environment has been generally consistent across descriptive and case studies utilizing clinical and non-clinical populations (Hodges et al., 1998; Lee & Lee, 1996). However, researchers have cautioned that although a relationship exists between disturbed eating patterns and family conflict, the occurrence of the conflict prior to the development of the particular eating patterns has not been investigated; thereby, limiting conclusions that can be drawn regarding cause and effect (Jacobi et al., 2004). Likewise, conflict within families in which an offspring is affected by a psychiatric disorder (or clinically significant psychiatric symptoms) that are not related to eating pathology is not atypical (Parker, 1983; Repetti, Taylor, & Seeman, 2002). Conflict has not been found to be unique to eating disordered families when compared with families of individuals affected by anxiety, for example (Woodside, Swinson, Kuch, & Heinmaa, 1996).

Conclusions. Findings from early review articles in the disordered eating-family dynamic literature concluded that the etiology of disordered eating patterns are complex and multifactorial (Killian, 1994; Kog & Vandereycken, 1985; Strober & Humphrey, 1987). The dominance of cross-sectional and case study designs in the literature has severely limited the causal relationship that can be drawn between disordered eating

symptoms and various family dynamics. Moreover, researchers have long advocated for more complex methodology and longitudinal designs that enable causal relationships to be investigated (Kog & Vandereycken, 1985). Studies finding no differences in comparisons between disordered eating groups and psychiatric controls and overall family functioning have contributed significantly to the debate regarding the role of family dynamics in the development of disordered eating. Although such evidence indicates that unhealthy family dynamics are not specific to the development of eating pathology it does lend support to an interpersonal model for understanding the development of disordered eating (Botta & Damloa, 2002; Kog & Vandereycken, 1989; Laliberte et al., 1999).

Recent reviews, however, have documented the shift in the disordered eating-family dynamics literature from investigating family correlates of disordered eating to risk factors for disordered eating, such that nearly 30 factors have been explored in the literature (Striegel-Moore & Cachelin, 2001; Jacobi et al., 2004). In one of the most comprehensive analyses of eating disorder risk factors to date, the researchers concluded that family process variables are classified simply as retrospective correlates with low to medium potency, and play a non-specific yet undefined role in the etiology of disordered eating (Jacobi et al., 2004). This non-specificity of family dysfunction variables, therefore, implies the possible role of additional mechanisms operating within the family that may possibly contribute to the development of a specific form of psychopathology, that is, disordered eating (Crowther et al., 2002).

Family Dysfunction, Negative Family Commentary Regarding Appearance, & Disordered Eating

There exists a general consensus among the disordered eating-family dynamics literature that family environment factors of the relationship type do not account for the etiology of disordered eating behaviors alone (le Grange et al., 2010). In fact, the trend within the familial literature in the last decade has been to include more specific family food-related variables into models of disordered eating; that is, negative commentary or teasing by parents related to the offspring's weight, appearance, or eating habits (Annus et al., 2007; Baker et al., 2000; Crowther et al., 2002; Haines et al., 2010; Kichler & Crowther, 2001; Kluck, 2008). Qualitative designs have also been employed to more fully understand the phenomenon of negative family commentary regarding appearance (Haworth-Hoepfner, 2000; Mellin et al., 2004). Qualitative analyses have indicated that unique family themes have emerged from interviews with women engaging in disordered eating patterns. In particular, specific parental commentary regarding the weight and appearance of both the offspring and the parents was often the focal point of communication within the home. Indirect discourse relating to weight and appearance also emerged, as parents made comments about individuals outside the family unit reflecting a general preoccupation with outer appearance, and may provide more specificity for risk of developing disordered eating over other psychiatric concerns (Kluck et al., in press; Young, Clopton, & Bleckley, 2004).

Despite the wide variety of methods utilized within this literature, findings across studies have indicated that specific family commentary (regarding weight and appearance) plays a significant role in the etiology of disordered eating, and family

commentary was identified as a retrospective correlate with low to medium potency (Jacobi et al., 2004). In fact, negative weight and appearance-based commentary from family members has been found to demonstrate more predictive power than that of family criticism in general (Baker et al., 2000; Crowther et al., 2002). For example, Crowther and colleagues (2002) measured overall family functioning (i.e., expressiveness, conflict, and cohesion), the family's attitudes and behaviors regarding eating, and negative commentary related to weight and appearance directed at offspring in a sample of college females. Consistent with previous research, general family dysfunction variables (i.e., expressiveness, conflict, and cohesion) predicted disordered eating patterns in females. However, negative commentary about weight and appearance was the strongest predictor of severe disordered eating behaviors. Moreover, the inclusion of specific variables related to family food-related experiences eliminated the unique predictive power of general familial conflict in predicting more severe disordered eating behaviors. Similarly, Baker et al. (2000) also reported criticism specific to weight and appearance as more strongly related to disordered eating than criticism associated with more general family dysfunction. Furthermore, in a sample of college females, negative commentary about the daughter's weight by parents was shown to mediate the relationship between general family dysfunction and level of disordered eating (Leung et al., 1996).

Studies have also identified the role of maternal comments regarding the weight and appearance of their daughters in the development of disordered eating (Cooley, Toray, Wang, & Valdez, 2008; Hanna & Bond, 2006; Kluck, 2008, 2010), such that negative comments from mothers regarding their daughters' physical appearance are a significant predictor of eating pathology and body dissatisfaction. Receiving such

negative messages about one's weight and appearance may lead to a learning process in which thin is identified as a primary form of attractiveness. In fact, preliminary mediation models suggest the drive for thinness may play a significant role in understanding the relationship between appearance-based commentary and disordered eating, as the internalization of the thin ideal has identified as a risk factor for disordered eating (Meno, Hannum, Espelage, & Low, 2008).

In one of the rare qualitative investigations of family commentary regarding appearance, Haworth-Hoeppner (2000) interviewed 32 females aged 21 to 44 with a variety of disordered eating behaviors regarding the nature of the family environment and parent-child communication themes while growing up (i.e., defined by the author as a critical family environment, coercive parental control, unloving parent-child relationship, and main discourse on weight). Analysis of the interviews suggested no single theme fully explained the presence of disordered eating symptoms in the population; however, a combination of three of the themes (i.e., critical family environment, coercive parental control, and main discourse on weight) emerged in connection with disordered eating symptoms. In particular, the combination of a main discourse on weight (defined as criticisms of the daughter's weight or appearance, parental dieting concerns, and prejudicial attitudes involving weight) and a critical family environment (defined as both negative general and appearance-related comments directed at daughters by parents in a hostile manner) was identified as a primary pathway in the development of disordered eating. In other words, within the context of a hostile and critical family environment, communication centered on the weight of both family and non-family members was associated with offspring engaging in disordered eating behaviors. Thus, it would appear

a “collective identity” emerges within the family in which members learn to internalize the thin ideal as a means of heightening connectivity among family members, distinguishing in- and out-group membership, and increasing the likelihood of problematic eating behaviors (pg. 223).

Family Abuse & Disordered Eating

A large body of literature exists on the long-term and multifaceted sequelae of childhood abuse and its relationship with the subsequent development of health-related problems and psychiatric disorders in adulthood (MacMillan et al., 2001; Rodgers et al., 2004; Romans, Belaise, Martin, Morris, & Raffi, 2002; Thompson, Arias, et al., 2002). Findings indicate that individuals with a childhood abuse history are significantly more likely to engage in risky health behaviors and experience higher lifetime rates of mood, anxiety, and substance abuse disorders (Thompson, Wonderlich, Crosby, Redlin, & Mitchell, 2002). Researchers have also examined the link between an abuse history and eating pathology, (Neumark-Sztainer et al., 2000; Schmidt, Humfress, & Treasure, 1997; Smyth et al., 2008; Thompson, Arias, et al., 2002).

Despite some research linking abuse with eating disorders, the precise role that different forms of childhood abuse play in the subsequent development of disordered eating behaviors has caused considerable debate within the literature (Smolak & Murnen, 2002). In particular, extensive differences in methodology and designs across studies within this body of literature make it difficult to draw strong conclusions (Wonderlich et al., 1997). The use of varying designs, statistical techniques, sample and control group composition, age of participants (e.g., children, adolescents, and adults), operational definitions of abuse, and outcome measures have compounded the construction of

predictive models of disordered eating due to the inconsistency in findings resulting from these studies (Thompson et al., 2000; Wonderlich et al., 2001a). The majority of the investigations into the relationship between childhood abuse and disordered eating currently in the literature have focused solely on the role of childhood sexual abuse (Smolak & Murnen, 2002; Thompson, Wonderlich, et al., 2002; Wonderlich et al., 2000), with very few studies examining other forms of childhood abuse, such as physical abuse (Kinzl, Mangweth, Trawger, & Beihl, 1997; Rorty, Yager, & Rossotto, 1995) and emotional abuse (Kennedy et al., 2007; Kent, Waller, & Dagnan, 1999; Rorty et al., 1994).

Sexual abuse. A recent longitudinal study documented the psychological sequelae of 2,739 childhood sexual abuse victims from a nationwide forensic database over the course of four decades. Sexual abuse victims were more likely to have received psychological services over their lifetime, been diagnosed with a clinical psychiatric disorder, and experienced a range of psychopathology (e.g., mood disturbances, psychosis, substance abuse, etc.) than matched, non-abused individuals (Cutajar et al., 2010). Although extensive evidence exists linking a childhood history of sexual abuse to a number of significant adjustment difficulties in adulthood, research demonstrating an empirical link between sexual abuse and eating pathology has been less conclusive.

Compared to non-victims, college females with a history of childhood sexual abuse have been found to have significantly higher total scores on eating disorder measures (Bostwick-Baldo, Wallace, & O'Halloran, 1996; Smolak, Levine, & Sullins, 1989; Williams & Gleaves, 2003). Similarly, in community samples, individuals sexually abused as children were more likely to engage in specific vomiting and other purging

behaviors in adulthood (Bardone-Cone et al., 2008; Kenardy & Ball, 1998; Wonderlich et al., 2000; Wonderlich et al., 2001b). Researchers have also found significant differences between psychiatric inpatients with a history of childhood sexual abuse and non-abused inpatients on specific eating disordered attitudes. In particular, patients with a history of childhood sexual abuse have been shown to experience more interpersonal difficulties related to trust and higher scores on a drive for thinness (Zlotnick et al., 1996).

In light of empirical associations between sexual abuse and disordered eating, researchers have postulated several theories believed to account for the relationship. A woman's use of disordered eating behaviors (i.e., binge eating, purging, fasting, extreme dieting, etc.) has been conceptualized as means to cope with the associated trauma of sexual abuse (Root, 1991; Root & Fallon, 1988). Women are socialized through media, cultural, and family messages that one's appearance plays a significant role in success and failure in life; therefore, following the experience of sexual trauma, focusing attention on one's appearance serves as a means to prevent future trauma. Specific behaviors such as binge-eating, purging, or fasting operate as mechanisms to escape disturbing emotional states or traumatic memories, or as part of a dissociative coping style to distressing situations or events (Root, 1991; Wonderlich et al., 1997).

Additionally, pathological eating has been conceptualized as a manner in which to punish one's body, as a reflection of sexual trauma that was endured (Smolak & Murnen, 2002).

In contrast, numerous studies have found no association between a sexual trauma history and subsequent development of disordered eating in college females (Kennedy et al., 2007; Schaaf & McCanne, 1994). Moreover, childhood sexual abuse was not found to be a unique predictor of binge eating behaviors in a community sample of adolescents, as

depressive symptoms and weight satisfaction emerged as the strongest predictors (Moyer, DiPietro, Berkowitz, & Stunkard, 1997). In studies examining clinical populations of eating disorder inpatients, no relationship was found between a sexual abuse history and severity of disordered eating (Anderson et al., 2000; Folsom, Krahn, Nairn, Gold, & Demitrack, 1993). There was also no difference between eating disorder inpatients and general psychiatric controls with regard to rates of childhood sexual abuse (Folsom et al., 1993).

Despite the inconsistent findings across the literature, recent reviews and meta-analyses have examined the childhood sexual abuse-disordered eating literature and concluded that sexual abuse serves as a small but non-specific risk factor with medium potency (Jacobi et al., 2004; Smolak & Murnen, 2002). Based on Smolak and Murnen's (2002) meta-analysis of 53 studies of childhood sexual abuse, they found childhood sexual abuse to have an effect size of $r = 0.1$. They also concluded that the specific methodology utilized in the studies made a considerable impact on the relationship between sexual abuse and disordered eating. Specifically, effect sizes tended to be largest depending on the grouping variable used in the design (i.e., sexual abuse), eating disorder measure, and comparison groups (i.e., clinical eating disorder groups versus non-clinical groups; Schaaf & McCanne, 1994).

The last decade has witnessed more of a consensus among researchers in the field regarding the non-specific role of childhood sexual abuse in the development of disordered eating. Researchers have utilized mediation modeling as a means to better understand the psychological mechanisms by which sexual abuse and disordered eating are linked, particularly, as sexual abuse has only a small amount of explanatory power of

disordered eating (Kong & Bernstein, 2009). Mediation studies to date have identified various mediators in the relationship between sexual abuse and disordered eating, including, self-criticism (Dunkley, Masheb, & Grilo, 2010), alexithymia (Hund & Espelage, 2006), depression (Kong & Bernstein, 2009), anxiety (Mitchell & Mazzeo, 2005), impulsivity (Wonderlich et al., 2001b), obsessive-compulsive disorder (Lockwood, Lawson, & Waller, 2005), and post-traumatic stress disorder (Holzer, Uppala, Wonderlich, Crosby, & Simmonich, 2008).

Physical abuse. The relationship between physical abuse and disordered eating patterns has typically been investigated in the context of sexual abuse in the literature (Kent & Waller, 2000). Although the operationalization of physical abuse varies across the literature, it is typically defined as physical injuries inflicted intentionally on an individual (Clemmons, Walsh, DiLillo, & Messman-Moore, 2007; Treuer et al., 2005). Similar to findings from the sexual abuse literature, studies examining the relationship between physical abuse and disordered eating have produced mixed findings. In one large-scale population survey of nearly 9,900 adolescents, researchers found that after controlling for sexual abuse and family functioning, adolescents with a history of physical abuse were at a significantly higher risk for developing disordered eating behaviors (Neumark-Sztainer et al., 2000). In clinical populations, individuals diagnosed with bulimia have been found more likely to experience physical abuse prior to the age of 18 compared to those with an eating disorder diagnosis other than bulimia (Rorty et al., 1995). Moreover, in a mixed sample of individuals diagnosed with clinical eating disorders (i.e., bulimia and anorexia), those individuals with a history of physical abuse, rather than sexual abuse, endorsed significantly more body image distortions than

individuals who experienced no abuse (Treuer et al., 2005). Non-clinical samples utilizing college students have generally found less of an association between physical abuse history and disordered eating patterns. That is, physical abuse has not been found to be a consistent predictor of disordered eating attitudes or behaviors in this population (Kennedy et al., 2007; Schaaf & McCanne, 1994). Thus, researchers have generally concluded that physical abuse operates via a similar channel as sexual abuse, such that it is a non-specific correlate of eating pathology (Kent & Waller, 2000).

Emotional abuse. Only within the last decade has the topic of emotional or psychological abuse been investigated in the context of childhood abuse and disordered eating (Teicher, Samson, Polcari, & McGreenery, 2006). Despite significant evidence in the literature of the co-occurrence of multiple forms of childhood abuse, emotional abuse has traditionally received minimal attention from researchers (Kent & Waller, 2000; O'Hagan, 1995). In contrast to physical and sexual abuse, abuse that is psychological in nature has been considerably more difficult to operationalize and measure within research designs (Rorty et al., 1994). While other forms of childhood abuse (e.g., sexual and physical) have been previously linked to disordered eating behaviors, those relationships are often attributed to the strong relationship shared among sexual and physical abuse with childhood emotional abuse (Kent, Waller, & Dagnan, 1999); particularly as emotional abuse has been conceptualized as the unifying experience across all forms of abuse (Hart & Brassard, 1987).

Among non-clinical populations, childhood emotional abuse has been found to be significantly related to disordered eating behaviors and attitudes (Kennedy et al., 2007; Kent et al., 1999; Rorty et al., 1994). In a study of 236 college females, researchers

sought to investigate the effects of individual forms of abuse (sexual, physical, emotional) on disordered eating attitudes. Although each of the three forms of abuse were significantly related to disordered eating attitudes, once physical and sexual abuse were controlled for, emotional abuse remained a unique predictor of eating-disordered attitudes (Kent et al., 1999). In clinical samples of individuals diagnosed with a bulimic disorder, a history of childhood emotional abuse has been found to be associated with severity of disordered eating attitudes and behaviors (Dunkley et al., 2010; Groleau et al., 2012; Wonderlich et al., 2007). The role of mediating variables has helped to further the understanding of the mechanisms underlying the relationship between childhood emotional abuse and disordered eating. Specifically, affective instability (Groleau et al., 2012), anxiety and dissociation (Kent et al., 1999), and depression (Kong & Bernstein, 2009) have all been found to fully mediate the relationship between childhood emotional abuse and disordered eating. These results suggest that the experience of repeated criticism and invalidation has significant implications for a child or adolescent in the development of disordered eating behaviors through emotional dysregulation processes and negative affect (Groleau et al., 2012).

Multiple forms of abuse. Researchers examining child abuse have recently begun incorporating the simultaneous occurrence of multiple forms of childhood abuse (i.e., sexual, physical, and emotional) into research designs (Dong et al., 2004; Higgins & McCabe, 2000; Higgins & McCabe, 2003). This effort to examine the co-occurrence of multiple forms of abuse as they relate to an increased risk for eating pathology (Kent et al., 1999; Schmidt et al., 1997; van Gerko, Hughes, Hamill, & Waller, 2005) has stemmed from numerous large-scale epidemiological surveys suggesting that forms of

childhood abuse very rarely occur in isolation (CDC, 2010; Dong et al., 2004). Therefore, the inclusion of multiple forms of abuse into multifactorial models of disordered eating would more accurately capture the complexity and heterogeneity associated with familial abuse (Ball, Kenardy, & Lee, 1999; van Gerko et al., 2005; Wonderlich, 1992). In fact, some evidence has emerged supporting the additive nature of childhood abuse, indicating that the more forms of abuse an individual is exposed to during childhood, the more severe their disordered eating symptoms appear to be in adulthood (Messman-Moore & Garrigus, 2007; Smyth et al., 2008).

Family Dysfunction & Family Abuse

Global dysfunction. Research within the child maltreatment field has been extensive in investigating the role that family functioning plays in the psychological well-being of abused children. The nature of family functioning within the context of childhood abuse research has been postulated to play a significant role in the likelihood of revictimization, adjustment following the abuse disclosure, and subsequent psychological well-being as an adult (Brown et al., 2000; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Messman-Moore & Brown, 2004). Specifically, in poorly functioning families with the presence of an abused child, parents are commonly characterized with “adult-centered issues,” that is, mental illness, substance abuse, incarcerations, domestic violence, an absence of bonding with their children, and maintaining an inconsistent structure within the family unit (Kellogg, 2002, p. 574). Such adult-centered issues are theorized to cause considerable turmoil within the home and diminish the abilities of the parent to care appropriately for the child’s overall well-being.

In addition, such adult issues have the potential to disrupt normal development within the offspring and increase their vulnerability to potential abuse (Kellogg, 2002).

Much of the research linking unhealthy family environments with abuse has examined children (Draucker, 1996). Among the family environmental factors identified that may place children at higher risk for sexual abuse are the child living separate from one or more biological parent, unavailability of the mother due to occupational demands or disability/chronic illness, high marital conflict, a low quality relationship between the parents and child, high punitive discipline of the child, and the presence of a stepfather in the home (Finkelhor, Ormrod, Turner, & Hamby, 2005). Building on these findings, Kellogg (2002) has proposed four models of family functioning that are characteristic of families with a sexually abused child. The family models are anchored on two intersecting continuums: 1) protective-harmful (i.e., safe versus unsafe) and 2) family-centered and adult-centered. The family dynamics on either continuum can range from enmeshed to unstable. Although Kellogg's modeling of family functioning is one of the only to provide a theoretical framework for conceptualizing sexually abused children and their families, there has been no empirical evidence to support the model.

Recent epidemiological studies have attempted to go beyond theorizing risk models for childhood maltreatment and gather data regarding the intersection of abuse and dysfunctional families (Dong et al., 2004). In a large-scale population study in which the co-occurrence of various types of adverse childhood events was examined, epidemiologists found an overwhelming degree of overlap between forms of abuse, neglect, and general dysfunction (defined as marital difficulties, domestic violence, household substance abuse/mental illness, and crime) in the sample. Nearly 67% of the

sample had experienced at least one form of abuse or neglect before the age of 18 and 86.5% of those individuals had experienced multiple forms. Adjusting for age, race, and educational status, individuals who experienced abuse or neglect were 2 to 18 times (median = 2.8) more likely to experience general dysfunction within the family or another form of abuse or neglect. Most notably, among the individuals reporting the presence of domestic violence in the home (i.e., witnessing physical violence between parents and/or caretakers), nearly 57% experienced being the victim of physical abuse (31% reported emotionally abuse and 36% reported sexual abuse); the alarmingly high co-occurrence of domestic violence in the home in addition to other forms of abuse has also been reported elsewhere (Kellogg & Menard, 2003). The aforementioned epidemiological study also revealed a dose-response relationship between sexual abuse and the likelihood of experiencing other general family dysfunction, abuse, or neglect. Moreover, the severity and frequency of the sexual abuse greatly increased the odds of the individual experiencing another form of abuse, neglect, or general dysfunction within the family (Dong, Anda, Dube, Giles, and Felitti, 2003).

Disturbed dynamics as dysfunction. Dysfunction has largely been conceptualized within the child maltreatment literature as representative of global sources of turmoil within the home, and a proxy of abuse (Kent & Waller, 2000). Such sources of dysfunction are primarily focused on the functioning level of the parent or caretaker and their subsequent levels of impairment. Parental substance abuse or mental illness, for example, is presumed to have far reaching effects on not only one's ability to care for their children but also their ability to maintain employment and fulfill basic responsibilities. However, if general dysfunction were to be examined on a micro level in

context of the parent-child relationship, the nature of the family environment may be better understood in its relationship to child maltreatment. That is, exploring the role of family process variables (e.g., cohesion, adaptability, conflict, etc.) as they relate to child maltreatment. Previous researchers have noted the lack of causality that can be drawn from such child maltreatment-family dynamics studies due to the prevalence of correlational designs (Messman-Moore & Brown, 2004); thus, opposing perspectives emerge in which either child abuse or dysfunctional family dynamics are thought to play a larger role in subsequent adjustment difficulties as an adult (Briere, 1988).

Researchers have begun to elucidate the complex relationship between specific family dynamics and forms of childhood abuse (Higgins & McCabe, 2000; Higgins, McCabe, & Ricciardelli, 2003; Meyerson et al., 2002; Messman-Moore & Brown, 2004). Meyerson and colleagues (2002) investigated the contributory role of childhood incidences of sexual abuse, physical abuse, and family dynamics (i.e., cohesion and conflict) to the psychological well-being of a sample of 131 adolescents. Individuals reporting physical abuse perceived their families as marked by high levels of conflict and low levels cohesion compared to non-physically abused victims. Similar patterns of family functioning have also been found in college women reporting a history of childhood physical and emotional abuse. Compared to women without a history of childhood abuse, women with an abuse history reported higher levels of conflict and lower levels of expressiveness and cohesion in their families-of-origin (Messman-Moore & Brown, 2004).

Women who reported sexual abuse as a child also demonstrated a similar pattern of perceiving their families to be less cohesive and marked by more conflict than females

without a history of sexual abuse (Benedict & Zautra, 1993; Ray, Jackson, & Townsley, 1991). However, research has failed to link the level of family functioning with a history of sexual abuse among college women. It may be that by the age at which most women enter college, sexual abuse is perpetrated more commonly by individuals outside of the family-of-origin, unlike physical and emotional abuse, which tend to occur within the family (LaFlair, Franko, & Herzog, 2008). Research on boys has not identified specific family dynamic constructs that relate to differences in prevalence of sexual abuse (Meyerson et al., 2002).

Similarly, family dynamics have also been shown to discriminate between individuals experiencing only one form of childhood abuse versus individuals experiencing multiple forms. For example, Higgins and McCabe (2000) found that family cohesion and adaptability, as well as the quality of the relationship between parents/caretakers and offspring, discriminated between childhood abuse survivors experiencing at least three forms of abuse from individuals not reporting any abuse in a community sample. Specifically, individuals reporting at least three forms of abuse experienced lowered cohesion, adaptability, and quality of relationship among parents/caretakers in their family-of-origin.

Family dysfunction variables have also emerged as predictors of forms of childhood abuse. In community-based research on children and adults, adaptability and quality of the parent-child relationship were found to be unique predictors of childhood physical abuse, emotional abuse, and witnessing domestic violence (Higgins & McCabe, 2003). Cohesion has also emerged as a predictor for a child to experience multiple forms abuse (Higgins & McCabe, 2000). These findings underscore the complex interplay that

currently exists between child maltreatment and dysfunctional family dynamics. Previous investigations of the long-term adjustment of childhood abuse survivors indicate that the overall effect of the abuse experiences depends on the nature of the family environment at the time of the abuse (Higgins, McCabe, & Ricciardelli, 2003). It does stand to reason, however, that when parents or caretakers perpetrate some level of abuse, there is a degree of dysfunction within family relationships in the home.

Negative Family Commentary Regarding Appearance as an Extreme Form of Family Dysfunction

Researchers have previously investigated negative family commentary regarding physical appearance within the family dynamics literature (Kichler & Crowther, 2001; Lundholm & Water, 1991). Negative commentary within the family can be conceptualized as a form of a dysfunctional home environment, particularly with regard to communication. Most notably, such commentary occurs as a function of unhealthy levels of conflict and expressiveness amongst family members (Crowther et al., 2002). It is important to note, however, that negative comments directed towards one's offspring regarding appearance does not exclusively occur in abusive or dysfunctional homes, nor does such commentary necessarily equate to an abusive experience. On the contrary, parents might provide appearance-related feedback out of concern for the physical health of their children or adolescents. However, in the context of a home in which dysfunctional familial dynamics are present, negative commentary regarding the appearance or weight of offspring can be particularly harmful for physical and mental health (Kluck, 2008; O'Leary & Maiuro, 2001). Such comments have the potential to cause significant damage to a child or adolescent's developing body image (Tantleff-

Dunn & Gokee, 2004). In particular, the salience of the comments can become even more powerful as they originate from within important interpersonal relationships in an individual's life.

Romantic Partner Influence on Disordered Eating

Relationship Between Family Abuse and Interpersonal Abuse

Ample research documents the relationship between childhood abuse and subsequent revictimization in adulthood (Bensley et al., 2003; Breitenbecher, 2001; Gidycz, Coble, Latham, & Layman, 1993; Messman & Long, 1996; Riggs & O'Leary, 1996). In a large-scale epidemiological study conducted on over 8,600 adults part of a large health maintenance organization, researchers surveyed their childhood experiences of sexual and physical abuse, and witnessing violence or threats against their mother. Findings indicated that for each form of childhood maltreatment experienced, an individual's risk of being physically or emotionally abused by an intimate partner increased two-fold (Whitfield, Anda, Dube, & Felitti, 2003). Furthermore, the risk to females experiencing intimate partner violence increased 3.5-fold if all three forms of maltreatment were present during childhood. In fact, either witnessing violence between parents or experiencing childhood physical abuse have emerged as two of the biggest predictors of violence between spouses among nearly 97 correlates (Hotaling & Sugarman, 1986, 1990).

Although there is little empirical evidence to refute the relationship, the specificity of the relationship between forms of childhood abuse and adult interpersonal violence remains unknown (Rich, Gidycz, Warkentin, Loh, & Weiland, 2005; Sanders & Moore, 1999). That is, how specific forms of childhood abuse (i.e., sexual, physical,

and/or emotional) are associated with an increased likelihood of experiencing specific forms of interpersonal abuse in adulthood remains unknown and confined to speculation. Compounding the issue, researchers often study only one form of abuse, to the exclusion of other forms of abuse, limiting the conclusions that can be drawn regarding the cumulative effects of multiple forms of childhood abuse on subsequent adjustment for adults in romantic relationships (Finkelhor et al., 2005; Rich et al., 2005).

The vast majority of evidence documenting the link between childhood maltreatment and revictimization by an intimate partner in adulthood has concentrated exclusively on the childhood sexual abuse-adult sexual assault link (Lau & Kristensen, 2009; Messman & Long, 1996; Sanders & Moore, 1999). Roodman and Clum's (2001) meta-analytic review of 19 studies found a total effect size of .59 between childhood sexual abuse and sexual assault in adulthood; however, the authors did not specify the precise nature of the relationship between the adult female and her perpetrator in their review of the articles. Although Messman-Moore and Long (1996) write, "revictimization is an interpersonal process" (p. 390), the underlying abuse dynamics could arguably differ within an intimate romantic relationship as opposed to that of an acquaintance/stranger relationship. Therefore, it remains unclear as to the true effect size of subsequent revictimization of childhood sexual abuse survivors within an intimate romantic relationship.

College students have been one of the most frequently surveyed populations for the link between childhood sexual abuse and subsequent sexual assault as an adult (Roodman & Clum, 2001). College females with a history of sexual abuse in childhood have been found to have a significantly higher risk of re-experiencing sexual trauma as an

adult than peers with no abuse history (Gidycz, Hanson, & Layman, 1995; Sanders & Moore, 1999). This is relevant given the unique developmental phase of young adulthood and their increased rates of sexual activity during this time, something also associated with greater risk of victimization (Mayall & Gold, 1995). Researchers have varied to some degree with their definition of ‘dating partner’ and/or ‘date’ within the context of describing their relationship with the perpetrator; thus, complicating the generalizations that can be made about revictimization across studies. In particular, some research designs lack clear relational status distinctions between victim and perpetrators in their study populations. In one such study, perpetrators were loosely classified as a continuum from a ‘dating partner’ (with no specified length of the dating relationship) to a ‘friend’ with which the victim has possible romantic and/or sexual interests (Sanders & Moore, 1999). Numerous comprehensive and theoretical models have been proposed to account for sexual revictimization that incorporate a range of personal, interpersonal, contextual, and societal variables (Messman-Moore & Long, 2003; Noll & Grych, 2011); however, these models have yet to be appropriately empirically evaluated.

Support also exists for a relationship between various forms of childhood abuse and subsequent victimization that is inclusive of all forms of abuse (physical, sexual, and emotional). A recent investigation of adolescents’ experiences with family and dating victimization indicated that compared to non-abused peers, females with childhood physical and emotional abuse were at a significantly higher risk of being abused either physically or emotionally by a dating partner (Laporte, Jiang, Pepler, & Chamberland, 2011). Similarly, among college students, a history of experiencing both family violence in the form of emotional abuse from both parents or physical abuse from fathers was

associated with experiencing dating violence. Thus, non-sexually based childhood traumas appear to play a significant role in the complex process of becoming revictimized as an adult for some women. In summary, considerable empirical evidence exists in support of the relationship between childhood abuse and subsequent revictimization as an adult.

Interpersonal Violence and Disordered Eating

The negative sequelae of intimate partner violence (IPV) as an adult have been well reported in the literature to produce an abundance of physical and psychological difficulties (for review of physical health correlates of IPV, see Plichta, 2004; for review of psychiatric correlates of IPV, see Okuda et al., 2011, Brown et al., 2009, and Romito, Turan, & DeMarchi, 2005). However, very little empirical attention has been paid to the connection between adult interpersonal violence and the subsequent development of psychological symptoms specific to eating pathology. Despite available reviews examining risk factors for eating disorders, IPV has not traditionally been included (Polivy & Herman, 2002; Stice, 2002). In the most comprehensive review to date, Bunford and colleagues (2013) reviewed the literature to estimate the prevalence of physical IPV among adult females with a diagnosed eating disorder (using a validated measure), which produced eight studies (for a total of 6775 women). Findings indicated the prevalence rates of physical violence in an intimate relationship ranged greatly depending of the classification of the eating disorder: anorexia nervosa (18%), binge eating disorder (18%), bulimia (25%), and eating disorders unspecified (studies grouping all participants with an eating disorder diagnosis; 25%). Although individuals diagnosed with an eating disorder were found to have a higher lifetime prevalence rate for physical

IPV, the paucity of research significantly limits the understanding of this relationship. That is, too little information is known about the temporal association between eating disorders and physical IPV, as well as the strength of the relationship.

Research exploring the link between sexual IPV and disordered eating continues to be conflicting (Dansky et al., 1997; Fischer et al., 2010), and findings are often confounded by significant methodological weaknesses (e.g., not controlling for a history of childhood sexual abuse or psychiatric co-morbidities; Garfinkel et al., 1995). In an attempt to clarify previous methodological issues, Wonderlich et al. (2001a) compared various clinical groups affected by childhood sexual abuse, adult sexual assault, or both to determine the unique influence of each form of sexual trauma on eating pathology. Findings indicated that individuals with a sexual trauma history in both childhood and adulthood exhibited significantly higher disordered eating symptoms than the adult sexual trauma only group, childhood sexual trauma only group, or control group. In particular, the group with both childhood and adult traumas displayed the highest lifetime rates of subclinical diagnoses of eating disorders compared to the other groups with only single indices of sexual trauma. However, details were limited regarding the nature of the relationship between the female participants and their perpetrators. Wonderlich and colleagues only reported whether the participants knew their perpetrator or not. Therefore, it remains unclear how these findings would relate to individuals sustaining sexual trauma from a romantic partners in a committed relationship and its association with disordered eating behaviors.

The few empirical studies that exist examining sexual/physical IPV within intimate relationships and disordered eating have been within the context of adolescent

dating relationships (Ackard & Neumark-Sztainer, 2002; Silverman, Raj, Mucci, & Hathaway, 2001; Thompson et al., 2000). In a school-based survey of nearly 2,600 adolescent females (ages ranged from 14-18) in North Dakota, nearly 14% of the population reported experiencing sexual violence in a dating relationship (Thompson et al., 2000). Adolescent females with a history of sexual violence were 1.5 to 3.5 times more likely to engage in unhealthy weight control practices (i.e., purging and diet pill consumption) compared to peers not reporting sexual violence while dating. Furthermore, the association between sexual dating violence and use of weight control techniques remained after controlling for the effects of a negative family environment. In another large school-based survey of over 2,000 adolescent females (ages ranged from 14 to 18) in Massachusetts, Silverman et al. (2001) found nearly 20% of their population surveyed endorsed physical and/or sexual violence perpetrated by a dating partner. Individuals with a history of physical and/or sexual violence in a dating relationship were three to four times more likely to engage in laxative use and purging behaviors to control their weight.

In one of the largest studies-to-date conducted on adolescent dating violence, Ackard and Neumark-Sztainer (2002) surveyed nearly 41,000 females in 9th and 12th grades regarding childhood abuse, dating violence experiences, and use of weight restriction techniques (using the same Youth Risk Behavior Survey as Silverman et al., 2001). Females endorsing physical and/or sexual violence within the context of a dating partner were almost four times as likely to use laxatives to control their weight than their non-abused peers. The connection between dating violence and weight control behaviors remained significant after controlling for experiences of childhood physical and sexual abuse. Dating violence victims were also more likely to engage in other aspects of

disordered eating, including, vomiting, binge eating episodes, diet pills, and skipping meals.

Although the connection between disordered eating and intimate relationships has been examined primarily from the perspective of sexual and physical violence, previous research has demonstrated the high rate of co-occurrence between all forms of abuse in IPV (Higgins & McCabe, 2003). However, there remains a dearth of evidence examining the role emotional abuse plays in the development in disordered eating in females experiencing interpersonal violence. In particular, emotional abuse has not traditionally been examined within the IPV-disordered eating literature. Researchers have recently examined additional relationship variables that might account for the development of disordered eating patterns within interpersonal relationship as a way to better understand how varying forms of partner abuse might relate to disordered eating behaviors (i.e., criticism from a partner regarding appearance; Morrison et al., 2009).

Negative Comments From a Romantic Partner as a Form of Psychological Abuse

Social relationships have the power to exert considerable influence on individuals, particularly as the desire to form close relationships is considered a basic human need (Deci & Ryan, 2000). Within close relationships, individuals are often motivated to maintain emotional connections through shared beliefs to ensure harmony and the ability to receive full benefits of the relationship (Wood, 2000). Conversely, disagreements among individuals in close relationships have the potential to heighten anxiety and feelings of rejection, as emotional connectivity between individuals may become fractured (Leary, Koch, & Hechenbleikner, 2001; Park & Crocker, 2008). The interpersonal process of sharing beliefs or messages (whether implicit or explicit) with

individuals in close relationships has received more attention in recent years as it relates to body image development (Tantleff-Dunn & Gokee, 2004). Specifically, the process of receiving feedback regarding one's physical appearance plays a major role in physical and mental health, as well as the development of self-concept, and particularly, in the perception of one's own physical attractiveness (Park, 2007; Tantleff-Dunn & Gokee, 2004); such a process has been found to be even more salient for individuals with a heightened sensitivity to rejection based on physical appearance and its association with negative mood states and lowered self-esteem (Park & Harwin, 2010).

Negative feedback regarding physical appearance and/or weight has previously been correlated with body dissatisfaction (Cash, 1995; Cattarin & Thompson, 1994; Kluck, 2010) and disordered eating behaviors, such as dietary restriction and purging (Aubie & Jarry, 2009; Kluck, 2008; Lieberman, Gauvin, Bukowski, & White, 2001; Olvera, Dempsey, Gonzalez, & Abrahamson, 2013; Quick, McWilliams, & Byrd-Bredbenner, 2013). Researchers have postulated that the social influence of close relationships (i.e., family members, peers) on body dissatisfaction may occur as individuals place a high value on maintaining shared beliefs as a function of emotional connectivity in the relationship (Carriere & Kluck, 2014).

While the harmful effects of negative appearance-based commentary on body satisfaction have been previously explored within the context of family and peer relationships (for a review, see Menzel et al., 2010), close relationships in the form of romantic relationships have been relatively neglected in the literature (Morrison et al., 2009; Pole et al., 2004; Ramirez, Perez, & Taylor, 2010). Romantic relationships are unique in their power to influence partners, as individuals often choose to spend

significant amounts of time in the presence of their romantic partner. Additionally, romantic partners are also likely to reveal intimate details and vulnerabilities in the context of the relationship that are often not replicated in other close relationships (e.g., with peers, family members, etc.; Tantleff-Dunn & Gokee, 2004). In particular, they may even share insecurities regarding aspects of their physical appearance or weight. Thus, romantic partners have the potential to exert significant influence on another partner's level of body dissatisfaction (Swann, Rentfrow, & Guinn, 2003), particularly in the form of negative commentary regarding appearance and weight. Researchers have documented the prevalence of this process (i.e., receiving explicit negative comments from their romantic partners regarding their appearance and the need to lose weight) within the context of romantic relationships in young adults with rates ranging from 20-30% (Eisenberg, Berge, Fulkerson, & Neumark-Sztainer, 2012; Sheets & Ajmere, 2005).

The few existing studies to date support a relationship between negative partner commentary regarding appearance and body dissatisfaction (Befort et al., 2001; Carriere & Kluck, 2014; Eisenberg et al., 2012). In one of the only studies to date to assess negative appearance-based commentary from romantic partners and disordered eating behaviors in a longitudinal design, Eisenberg et al. (2012) followed young adults over a five-year period and collected data at three time points (average age of participants was 25 at the conclusion of the study). After adjusting for concurrent negative appearance-based commentary from family members and previous periods of weight control techniques, the predicted probability of reporting any use of a weight control technique (i.e., diet pills, diuretics, laxatives, or purging) was 33% for females receiving hurtful appearance-based commentary from a partner, compared to only 18% of individuals who

did not report similar comments. Moreover, the probability of engaging in chronic dieting was nearly double the rate (13% vs. 6%) in females reporting hurtful appearance-based commentary compared to individuals not reporting such comments. Thus, the influence of romantic partners' negative comments regarding appearance were particularly harmful, and significant in their predictions of disordered eating practices in young women. The quality of marital relationships has also been found to be predictive of unhappiness with one's physical appearance and disordered eating behaviors, such that lower harmony and emotional connectivity is associated with females engaging in unhealthier eating and dieting practices (Friedman, Dixon Brownell, Whisman & Wilfley, 1999; Markey, Markey, & Birch, 2001; Pole et al., 2004; Schade, Sandberg, & Busby, 2014).

In one of the few studies investigating the role of negative appearance-based commentary in middle-aged women, both positive and negative comments from spouses were found to affect body esteem (McLaren, Kuh, Hardy, & Gauvin, 2004). In particular, McLaren et al. found that the body esteem of women (ages 47 to 54) with thinner body types were more negatively affected than women with heavier body types when hearing either type of comment from their spouse. Results also indicated that the effect of negative appearance-related comments from childhood on current level of body esteem could not be accounted for by negative comments from spouses. Nor could positive comments from spouses cancel out the harmful effects from negative comments during childhood. In all, findings suggest appearance-related comments from partners can affect women's body satisfaction differentially based on their body type and the presence of negative appearance-related comments from childhood in middle aged women.

The interpersonal dynamics of a romantic relationship in which negative appearance-based comments are present has not been adequately studied in the literature; therefore, a framework is lacking to fully understand the greater context in which such potentially harmful verbal comments can occur. Researchers within the psychological abuse literature provide the best framework for which to understand the nature of the negative comments, and how such comments rank on a continuum of psychological/emotionally abusive acts (for a review, see Carney & Barner, 2012). Psychological abuse can include verbal acts or behaviors that can inflict a wide array of negative affective consequences, ranging from rejection and humiliation to exploitation and terror (Follingstad & DeHart, 2000; Maiuro, 2001). Likewise, negative comments directed at romantic partners regarding their general appearance and weight could also theoretically vary regarding the level of harshness, the purpose of the comments (e.g., comments made to encourage more healthy eating habits vs. comments made to ridicule), and interpersonal context in which the comments are delivered. Despite the ambiguity in the classification of negative appearance-based comments within romantic relationships, such negative comments can be understood as falling on a continuum of psychological/emotionally abusive acts.

CHAPTER 3

Method

Design

The study was a correlational study designed to test a theoretical model regarding the role of negative appearance-related commentary within familial and romantic relationships in the development of eating pathology. Specifically, the study investigated how family dysfunction, family abuse, and negative appearance-related commentary related to one another in the development of disordered eating. Additionally, the study sought to investigate how partner abuse related to negative appearance-related commentary from partners, and to the development of disordered eating.

Participants

Disordered eating behaviors in undergraduate student populations have been documented at a higher frequency in females than males; thus, only female undergraduate students were recruited for the purpose of this study (Keel, Heatherton, Dorer, Joiner, & Zalta, 2007). Additionally, with the median onset of disordered eating behaviors occurring between 18 and 21 years of age in females (Hudson, Hiripi, Pope, & Kessler, 2007), a college campus provided an ideal setting for participant recruitment. Thus, a non-clinical sample of undergraduate female students age 19 (the age of consent in the state of Alabama) or older was recruited from Auburn University. Participants were all

enrolled in at least one undergraduate psychology course in order to access the psychology department's participant pool.

There is currently a dearth of research within the disordered eating literature in which the roles of heterosexual romantic partners are examined in context to the development of disordered eating in dating relationships; therefore, no standard length of time for dating relationships exists within the literature in examining appearance-based commentary and disordered eating constructs. Previous studies (Tantleff-Dunn & Thompson, 1995; Tantleff-Dunn, Thompson, & Dunn, 1995) investigating body image constructs within heterosexual romantic relationships have utilized a one-month minimum for study inclusion. Other studies, such as the one in which the partner commentary measure was developed (Carriere & Kluck, 2014) have used a three-month minimum. To assess the influence of appearance-based commentary from a romantic partner, a three-month minimum was established for inclusion into the present study. The participant pool was restricted to females that indicated current involvement in a romantic relationship (with a total duration of at least three months) or previous involvement in a romantic relationship within the previous 12 months (with a total duration of at least three months). It was believed that a romantic relationship of at least three months duration would enable a pattern of communication to be established between the romantic partners, and thus, able to be measured empirically.

Sample Characteristics

A total of 238 undergraduate female students completed the study. Nine were excluded from the analyses because they did not meet inclusion criteria for sexual orientation. An additional 10 participants were excluded because they did not meet the

inclusion criteria for relationship status. There were 219 participants meeting the inclusion criteria that were included in the final analyses.

Participants that met the inclusion criteria for the study had a mean age of 20.52 with an age range of 19 to 32. Of those participants, 17.9% reported last living full-time with their parents as less than 12 months prior to their participation, and most (82.1%) reported at least 12 months had elapsed since last living with their parents. The majority of the sample self-identified as Caucasian (82.6%), with 11.9% African-American, 1.8% biracial/multiracial, 1.4% Asian/Pacific Islander, .9% Hispanic/Latina, and 1.4% other. A total of 14.2% reported being in their first year of college, 29.2% in their second year, 28.8% in their third year, 25.6% in their fourth year, and 2.3% as other.

The majority of participants (96.8%) described their marital status as single (dating, engagements, cohabitating with a partner), while 2.3% were married, .5% divorced, and .5% other. Among participants meeting inclusion criteria, 71.2% indicated they were currently involved in a romantic relationship of at least three months duration (with 65.3% of those participants reporting their current relationship duration as longer than 12 months). Of those participants indicating they were not currently involved in a romantic relationship, 56.3% reported their longest relationship within the last year as lasting between three to six months, and the remaining 43.5% reported their longest relationship as seven to 12 months.

Procedure

Undergraduate participants were recruited following policies established between the Institutional Review Board and the Auburn University psychology department. The study and a brief description were advertised on the web-based system, SONA, utilized

by the psychology department. Participants then signed up for an available study time, which instructed them to present to a specific on-campus public computer lab to complete the study. Research assistants met participants at the computer labs and assigned them to designated computers with the study's information letter on the computer screen (Appendix A). Research assistants then read from a script (Appendix B) that briefly explained the nature of the study and their rights as research participants, including their right to withdraw from the study at any time with no negative consequences.

Participants then began the Qualtrics hosted survey by first reading the study's information letter and providing electronic consent. Then, they completed demographics questions regarding their personal, family, and relationship status (Appendix C). Following the demographics section, participants began completing the six different measures. The order of the six measures was partially counterbalanced to account for order effects, and thus, produced six different orders (Reese, 1997). Compensation was awarded to the undergraduate participants in the form of extra credit for eligible psychology courses.

Following completion of the study, participants were provided with a handout listing of area agencies that offer clinical services to individuals suffering from various psychiatric disorders. Participants were informed that they were financially responsible for clinical services offered within the community unless they were able to use services provided as part of their student fees to the university through the Auburn University Student Counseling Services (Appendix D).

Measures

Family dysfunction. The family dysfunction construct was measured with the *Family Adaptability and Cohesion Evaluation Scales-IV* (FACES-IV), which was designed to assess the cohesion and flexibility constructs within the Circumplex Model of Marital and Family Systems (Olson et al., 2007). The FACES-IV is comprised of six subscales (42 items across all subscales) that are grouped along the cohesion and flexibility dimensions: Balanced Cohesion, Enmeshed, Disengaged, Balanced Flexibility, Chaotic, and Rigid. The two balanced scales (Balanced Cohesion and Balanced Flexibility) serve as indicators of healthy functioning within the family (as higher scores denote more positive cohesion and flexibility). The four unbalanced scales (Enmeshed, Disengaged, Chaotic, and Rigid) serve as unhealthy extremes of the cohesion and flexibility dimensions. Higher scores on any of the four unbalanced scales indicate poorer family functioning with regard to cohesion and flexibility. Sample items include, “Family members are involved in each other’s lives,” and “There are strict consequences for breaking the rules in our family.” FACES-IV is designed to be self-administered and each item is answered on a five point Likert-scale (ranging from *strongly disagree* to *strongly agree*). For the purpose of this study, the Balanced Cohesion subscale was used to assess family functioning. Thus, higher scores on this subscale indicate more cohesion in the family.

The FACES has been one of the most widely used assessments of global family functioning since first being published in 1979, and has appeared in over 1,200 studies (Olson, 2011). Internal consistency data for the six subscales indicates strong reliability: Balanced Cohesion = .89, Disengaged = .87, Enmeshed = .77, Balanced Flexibility = .84,

Chaotic = .86, and Rigid = .82. FACES-IV has also correlated well with other measures of general family functioning, including the *Self-Report Family Inventory* (Health/Competence Subscale; Hampson & Beavers, 1996), *Family Assessment Device* (General Functioning Subscale; Epstein, Baldwin, & Bishop, 1983), and *Family Satisfaction Scale* (Olson, 1995).

Family abuse. The family abuse construct was measured by the *Computer Assisted Maltreatment Inventory* (CAMI; DiLillo et al., 2010). The CAMI is designed to behaviorally measure retrospective reports of multiple forms of childhood maltreatment occurring before the age of 18, including physical, sexual, and psychological. The CAMI is comprised of five subscales: physical abuse, sexual abuse, psychological abuse, neglect, and exposure to interparental violence. For the sexual abuse, physical abuse, and exposure to interparental violence scales, participants are first presented with behaviorally specific screener questions to assess whether they experienced a range of abusive acts. Although follow-up questions on these three scales serve to assess the degree and variability of the abuse (e.g., nature, frequency, duration, degree of forced used, and resulting injuries), only the presence of the abuse across the five subscales was scored and analyzed. The sexual abuse, physical abuse, and exposure to interparental violence subscales can be scored and analyzed without the use of follow-up severity questions (DiLillo et al., 2010).

Sexual abuse subscale. The screener questions for childhood sexual abuse (CSA) asked participants to indicate whether any type of “hands-on sexual act” (e.g., ranging from kissing, fondling, and penetration) occurred: 1) against their will, 2) with a family member, or 3) with someone five or more years older (if the individual is under the age of

14; DiLillo et al., p. 307). If the individual is between the ages of 14 and 17, the sexual act must be with someone 10 years or older to be considered sexual abuse. For the purposes of this study, participants endorsing any one of the three sexual abuse screener questions were classified as CSA victims and received a score of “1” for the presence of sexual abuse during childhood. Participants indicating no to all of the sexual abuse screener questions received a score of “0” for the absence of sexual abuse.

Physical abuse subscale. The screener questions for childhood physical abuse (CPA) asked participants to indicate whether any type of physically aggressive act by a parent or adult caregiver occurred before the age of 18 (e.g., grabbed or shook you hard, threw or knocked you down, hit you with an open hand or fist). For the purposes of this study, participants endorsing any one of the nine physical abuse screener questions were classified as CPA victims and received a score of “1” for the presence of physical abuse during childhood. Participants indicating no to all of the physical abuse screener questions received a score of “0” for the absence of physical abuse.

Exposure to interparental violence subscale. The screener questions for exposure to interparental violence subscale asked participants to indicate whether any type of physically aggressive acts (e.g., grabbed, pushed, shook, slapped with an open hand, hit with an object to cause minor injury) occurred between parents or adult caregivers before the age of 18. Respondents selected from one of four statements to assess the degree of exposure to a particular act (1 = *I was in the room or area and saw this happen*; 2 = *I was close by and heard this happen but did not see it*; 3 = *I was gone when this happened but heard about it later*; 4 = *This activity never occurred between my parents*). Participants responding with a 1, 2, or 3 to any of the nine screener questions were classified as

victims of exposure to interparental violence and received a score of “1” for the presence of parental violence during childhood. Participants indicating no to all of the screener questions received a score of “0” for the absence of exposure to interparental violence.

Neglect and psychological abuse subscales. For the neglect and psychological abuse scales, screener and follow-up questions are not administered due to the broad nature of these types of parental behaviors; instead, participants are presented with a variety of positive and negative statements regarding parenting behaviors. Participants are asked to rate each statement on a 5-point Likert-based scale (1 = *strongly disagree* to 5 = *strongly agree*) on their experience with each behavior. The neglect subscale (e.g., “As a child, I was left in unsafe situations without supervision”) consists of 20 items and separated into five subtypes of neglect: basic needs, cleanliness, abandonment, supervision/monitoring, and medical neglect. The psychological abuse subscale (e.g., “My parents made me cry for no good reason”) consists of 24 items and separated into three subtypes of psychological abuse: denying emotional responsiveness, terrorizing/spurning, and corrupting. Only the total neglect and psychological abuse subscale scores were calculated for the current study.

Participants were classified as victims of childhood neglect or psychological abuse if either of the total scores were at least one standard deviation above the mean score for their respective subscale. Participants scoring at least one standard deviation above the mean on the neglect subscale received a score of “1” for the presence of childhood neglect. Similarly, participants scoring at least one standard deviation above the mean on the psychological abuse subscale received a score of “1” for the presence of childhood psychological abuse.

In the initial validation study of the measure, DiLillo et al. (2010) obtained reliability data on nearly 1,400 undergraduate students across three large, geographically diverse universities. Due to the nature of the sexual abuse, physical abuse, and exposure to interparental violence subscales (that is, the nature of the screener and follow-up questions, as well as the inclusion of a severity weight in calculating an overall severity score for each subscale), traditional measures of internal consistency, such as coefficient alpha, is not appropriate. Item-total correlations for the three subscales described above have been reported by DiLillo and colleagues as: .18 to .48 (sexual abuse), .16 to .37 (physical abuse), and .22 to .65 (exposure to interparental violence). The other two subscales, psychological abuse and psychological neglect, utilize Likert-type items in their construction, and therefore, produce coefficient alpha values. In DiLillo's initial validation, the reliability coefficients for psychological abuse and psychological neglect were reported as .91 and .88.

In a comparison study to one of the most wide used assessments of child maltreatment, the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), the CAMI demonstrated high specificity in identifying sexual and physical abuse victims compared to the CTQ (92% and 80% agreement; DiLillo et al., 2006). Furthermore, analyses comparing the relationship between the five subscales of the CAMI to the five subscales of the CTQ, which are nearly identical with regard to content (i.e., CTQ subscales: sexual abuse, physical abuse, emotional abuse, emotional neglect, and physical neglect), demonstrated modest intercorrelations among all the subscales (DiLillo et al., 2010). The strongest intercorrelations emerged between similar subscales of the CAMI and CTQ. Thus, the CAMI is able to discriminate between multiple forms of childhood

maltreatment, and performs equivalently as an established and valid measure of child maltreatment.

Romantic partner abuse. The *Severity of Violence Against Women Scales* (SVAWS; Marshall, 1992) was used to measure the partner abuse construct. The SVAWS is designed to measure acts of physical, sexual, and emotional abuse committed against women. The measure was constructed to account for limitations in previous measures of partner violence, such that the effects of varying types of violence can be assessed. The SVAWS is able to measure the “seriousness, abusiveness, aggressiveness, violence, and threat value of the acts” (Marshall, 1992, p. 105), including those that are less severe. The 46-item SVAWS is comprised of four subscales: Symbolic Violence, Threats of Physical Violence (including three dimensions of mild, moderate, and serious threats of physical violence), Actual Physical Violence (including four dimensions of mild, minor, moderate, and serious physical violence), and Sexual Aggression. For the purposes of this study, only the Threats of Physical Violence and Actual Physical Violence subscales were used (thus, acts of psychological abuse were not directly assessed via the subscales administered for the present study and the SVAWS contained no direct measures of comments about appearance). Respondents rated the items on a four-point Likert scale (*never to many times*), with higher scores indicating an increasing severity of abuse.

Reliability data for the SVAWS was collected from an initial norming pool of undergraduate and community-based samples of women. Reliability coefficients obtained from the 707 undergraduate students that participated in the study ranged from .92 to .96. The coefficients for the 208 community-based sample of women ranged from .89 to .96.

The author concluded that the initial testing of the SVAWS across the two populations of women supported the scale's ability to appropriately measure the effects of different forms of partner abuse in undergraduate and community-based samples of women (Marshall, 1992). Subsequent research with specific subscales of the SVAWS produced reliability coefficients for the Threat of Physical Violence subscale ranging from .76 to .95 and reliability coefficients ranging from .87 to .95 for the Actual Physical Violence subscale (Pearce et al., 2003; Silva, McFarlane, Soeken, Parker, & Reel, 1997). In another study with 111 adolescents, Levendosky, Huth-Bocks, and Semel (2002) found a reliability coefficient of .95 for the total score across both the Threat of Physical Violence and Actual Physical Violence subscales.

Calculations for a total score across the Threat of Physical Violence and Actual Physical Violence subscales are computed by multiplying the frequency of each item (from the two subscales) by either a physical harm or emotional harm severity rating. Marshall (1992) has previously computed physical harm and emotional harm severity ratings for both community and undergraduate samples in her initial original validation of the scale. For the purpose of this study, only the emotional harm ratings were used in the calculation of the total score. For each item, the respondent indicated the frequency by which a particular act has previously occurred. The item was then scored by multiplying the frequency by the emotional harm severity rating (specific to college students), which was subsequently repeated with all items across the two subscales, and summed for a total score (Levendosky et al., 2002). Despite the adequate reliability coefficients obtained from the SCAWS, limited validity data for the SCAWS is available in the literature (Lemmey, McFarlane, Wilson, & Malecha, 2001; Marshall, 1992).

Negative family commentary regarding appearance. This construct was measured by the *Family Experiences Related to Food Questionnaire* (FEFRQ; Kluck, 2008) in this study. The FEFRQ is a 12-item questionnaire designed to measure the frequency of specific experiences related to food within the familial context. Although this measure is comprised of two subscales, only the Negative Commentary subscale (5-items) was utilized. Respondents answer the items on a five-point Likert scale (*never to all the time*), with higher scores indicating a higher frequency of negative commentary toward an individual regarding food, weight, or size. A sample item from the negative commentary subscale states, “Encouraged you to control your weight/size through dieting, exercise, or other weight control behaviors” (p. 475). Although the FEFRQ is comprised of separate forms to measure the influence of the mother and father (or mother/father-like figures), only the mother form was utilized for the present study. Scores on the subscale were totaled to create an overall score of negative family commentary regarding appearance. Reliability data for the FEFRQ subscales has demonstrated reliability coefficients to range from .71 to .84 (Kluck, 2008). Specifically, the Mother Commentary subscale has demonstrated a reliability coefficient of .83 (Kluck, 2010).

Negative partner commentary regarding appearance. This construct was measured by a modified version of the *Verbal Commentary on Physical Appearance Scale* (VCOPAS; Herbozo & Thompson, 2006). The VCOPAS is a 21-item questionnaire designed to measure the frequency of both positive and negative commentary on appearance and weight and shape. Individuals indicate the frequency in which they receive such commentary from others on a five-point Likert-scale (*never to always*). The

VCOPAS was originally normed on undergraduate students. Initial exploratory analyses indicated a three factor scale: positive comments related to one's general appearance (seven items), positive comments related to one's weight and shape (five items), and negative comments related to one's weight and shape (nine items). Only the subscale assessing negative comments from partners about weight/shape from the modified VCOPAS for comments from romantic partners was used for this study to be consistent with the measure for mother's negative comments (i.e., the FERFQ). Internal consistencies from the original instrument were strong for each subscale with a range of .75 to .89. The scale also demonstrated adequate test-retest reliability. The VCOPAS demonstrated strong concurrent validity with other measures of positive and negative verbal commentary.

Carriere and Kluck (2014) modified the items on the VCOPAS to specifically assess commentary about appearance from partners (called the VCOPAS-Partner or VCOPAS-P). This involved slight modifications to the directions and item wordings to reflect comments occurring within romantic relationships. Using exploratory factor analysis, they confirmed the presence of the three factors for the measure. Although, some items on the two scales assessing positive comments failed to load on the original scale, the items loading on the negative comments about weight/shape subscale were identical to the original measure developed for assessing comments from peers. Using the resulting subscales from their factor analysis, Carriere and Kluck (2014) found the internal consistencies for the modified subscales to range from .78 (for positive comments about appearance in general) to .94 (for negative comments about weight/shape).

In addition to confirming the general factor structure, Carriere and Kluck (2014) found evidence to support the convergent validity of the VCOPAS-P in that scores from both subscales assessing weight/shape commentary were associated with measures of body dissatisfaction and they found these subscales to have incremental validity in predicting weight and shape dissatisfaction after controlling for general relationship dissatisfaction. Finally, evidence of discriminant validity was found with the VCOPAS-P subscales being unrelated to a measure of social desirability.

Disordered Eating. For the purpose of this study, disordered eating was operationally defined as behaviors (e.g., bingeing/purging and restriction behaviors) and attitudes (e.g., body image disturbances) associated with clinical eating disorders that do not necessarily meet full diagnostic criteria (Smyth et al., 2008). In addition, the definition encompassed “measurement of psychological traits or symptom clusters relevant to the development and maintenance of eating disorders” (Garner, 2004, p. 17).

The disordered eating construct was measured by the *Eating Disorders Inventory-3* (EDI-3; Garner, 2004). The EDI-3 is a self-administered questionnaire has been normed on adult populations, both in clinical and non-clinical settings. The EDI-3 consists of twelve subscales, which are further grouped into two larger scales, including the Eating Disorder Risk scale and Psychological scales. For the purposes of this study, only the 25-item Eating Disorder Risk scale was used. The scale is comprised of the following subscales: Drive for Thinness (DT; seven items), Bulimia (B; eight items), and Body Dissatisfaction (BD; ten items) scales (Garner, 2004, p. 31). As such, it assesses symptoms associated with fear of gaining weight (DT subscale; scores range from 0-28), binge eating (B subscale; scores range from 0-32), and body dissatisfaction (BD subscale;

scores range from 0-40). Respondents answer the items on a six-point Likert scale (*never* to *always*), and then are assigned a score for each item that ranges from zero to four. The three least pathological responses are scored as a zero. The raw scores from the subscales are totaled to create an overall score. Higher scores are indicative of more serious levels of eating disorder attitudes and behaviors.

Reliability data obtained for the Eating Disorder Risk scale has yielded satisfactory reliability coefficients that range from .90 to .94 for the various norming groups. Test-retest reliability for a group of 34 women diagnosed with an eating disorder yielded a coefficient of .95 with approximately one week between the administrations. The EDI-3 has also demonstrated adequate construct, convergent, and discriminant validity (Garner, 2004).

Data Analytic Strategy

After examining the descriptive statistics of the participants and measures, data analyses included reliability estimation, correlation analyses, and path analyses using SPSS 20 and EQS 6.2. The path analytic approach was utilized to examine the relationship between the variables in the various hypothesized models. The following paragraphs contain the details of the analyses and the statistical techniques utilized to analyze and report the data. SPSS 20 was used for descriptive statistics and reliability analysis. EQS 6.2 was used to conduct path analyses.

To evaluate the fit of models generated from path analyses, Kline (2011) has suggested guidelines for the various types of fit indices and related interpretative strategies, which all offer differing perspectives in evaluating model fit. The model chi-square (χ^2) represents a basic model test statistic and scaled as a badness-of-fit statistic,

such that as χ^2 increases, the fit of the model worsens. The χ^2/df ratio is also utilized as a model test statistic, as values ≤ 3 are acceptable for model fit. Approximate fit indexes represent continuous measures of fit between the dataset and model specification. In contrast to model test statistics, most approximate fit indexes are scaled as goodness-of-fit statistics (that is, as the value increase, the fit also increases; a value of 1.0 indicates the best fit).

For the purpose of this study, the following approximate fit indexes are used:

Comparative Fit Index (CFI), *Non-Normed Fit Index (NNFI)*, *Standardized Root Mean Square Residual (SRMR)*, and *Root Mean Square Error of Approximation (RMSEA)*.

The CFI, a measure of incremental fit, assesses the improvement in fit in the researcher's model over that of a baseline or null model that assumes no population covariances among the observed variables (Kline, 2011). The range of the CFI should be equal to or greater than .90 for a good model fit (total range is 0.0 to 1.0; Kline, 2011). Similar to the CFI, the NNFI is also a measure of incremental fit but incorporates the complexity of the model into the overall calculation. For the NNFI, the desired range is equal to or greater than .90 for a good model fit (Kline, 2011). The SRMR assesses model fit based on the mean absolute correlation residual across all measures, which represents a difference between the observed and predicted correlations (Kline, 2011). The generally accepted value for the SRMR is equal to or less than .08 (Bentler & Hu, 1999), as values greater than .08 represent worse explanatory power of the variables to the model.

The RMSEA, a measure of a parsimony-adjusted index, adjusts for model complexity and prefers more parsimonious models (with higher degrees of freedom; Kline, 2011). It is scaled as a badness-of-fit of fit statistic, such that higher values

indicate worsening fit (zero indicates the best fit). For a model with good fit, the RMSEA should be equal to or less than .05, while a value equal to or greater than .10 indicates significant problems in model fit (Kline, 2011). The 90% confidence interval is also reported for RMSEA. The lower bound should be as close to zero as possible. The width of the confidence interval is considered informative regarding the precision of the RMSEA (Bentler & Hu, 1999).

In comparing hierarchical, or nested models, the chi-square difference statistic (χ^2_D) is used to compare models that have paths removed or added. The difference between the χ^2 and degrees of freedom between two models indicates whether the model has been oversimplified (i.e., by removing a path) or added a path that does not statistically improve the fit of the model. The chi-square difference test can be univariate (i.e., one path has been removed/added) or multivariate (i.e., two or more paths have been removed/added). In the comparison of non-hierarchical, or non-nested models, the chi-square difference test cannot be used. Therefore, researchers recommend the *Alkaike Information Criterion* (AIC), a parsimony-adjusted index statistic, as the best comparison tool for non-hierarchical models. The model with the smallest AIC is generally chosen as the best fitting model (Kline, 2011).

After computing basic descriptive statistics for the sample and each of the scales (e.g., measures of central tendency, standard deviation, reliability estimates), and examining the correlations between scales, path analysis was employed to test the hypotheses. First, to evaluate the relationships between family (family dysfunction, family abuse, negative maternal commentary) and partner (partner abuse, negative partner commentary) variables and disordered eating, correlations were conducted.

Second, to evaluate if mother negative commentary regarding weight/appearance mediated the relationship between family abuse and disordered eating, mediation was examined using path analysis. Third, to evaluate if family abuse and mother commentary regarding weight/appearance mediated the relationship between family dysfunction and disordered eating, mediation was examined using path analysis. Fourth, to evaluate if partner commentary regarding weight/appearance mediated the relationship between partner abuse and disordered eating, mediation was examined using path analysis. Fifth, to evaluate the fit of the entire model (comprised of all six variables), a path analysis was conducted with the comprehensive model. Path analysis is an appropriate technique to evaluate the research hypotheses and questions because a theoretical framework can be constructed to examine the relationship between the various factors. Moreover, a path analysis allows for only one measure per variable in order to test the model (Kline, 2011), which is the design used for this study. Finally, additional alternative path models and regressions were examined to determine if other relationships among study variables might matter in the model.

CHAPTER 4

Results

Descriptive Information for Measured Variables

After all measures were scored, basic descriptive statistics were conducted. The Cronbach alpha coefficients were obtained for each scale (Table 1). Review of Table 1 shows adequate reliability for all scales used as variables in the analyses of the full model and other hypotheses. The obtained Cronbach alpha coefficients are generally consistent with values reported in the literature. Table 1 also contains the means, standard deviations, and intercorrelations for all measured variables.

With regard to disordered eating symptoms (as measured by the EDI-3 Eating Disorders Risk Scale), the sample averaged 9.54 ($SD = 7.39$, $T \leq 42$) on the Drive for Thinness subscale. Raw scores below 16 are considered within the low clinical range for an eating disorder not otherwise specified (EDNOS) clinical population. Approximately 79.2% of the sample fell below the low clinical range for an extreme desire to be thinner. On the Bulimia subscale, the sample averaged 4.42 ($SD = 5.28$, $T \leq 42$). Raw scores less than five are considered within the low clinical range for an EDNOS clinical population. Approximately 64.4% of the sample fell below the low clinical range for overeating (i.e., binge eating). On the Body Dissatisfaction subscale, the sample averaged 15.86 ($SD = 9.65$, $T \leq 42$). Raw scores less than 21 are considered within the low clinical range for an EDNOS clinical population. Approximately 67.6% of the sample fell below the low

clinical range for discontentment with shape and size of their body. In all, the sample reported an overall low level of clinical symptoms associated with disordered attitudes and behaviors.

On the family abuse measure, approximately 27.4% of the sample endorsed at least one of the screener items consistent with childhood sexual abuse (i.e., sexual act occurring against their will, with a family member, or a non-family member at least five or 10 years older depending on the age of the participant). For childhood physical abuse, approximately 69.4% of the sample endorsed at least one of the screener items. Further inspection of the childhood physical abuse screener items indicated 64.7% of the sample endorsed the item “Before you were 18, did either parent or caregiver ever discipline you by spanking you hard?” The second highest endorsed childhood physical abuse item pertained to being “hit or slapped” by a parent or caregiver. Physical acts perpetrated by parents or caregivers that are classified as more serious or violent in nature (e.g., being kicked, choked, burned, or threatened with a weapon) were endorsed by less than 1.4% of the sample.

For exposure to interparental violence, approximately 26.5% of the sample endorsed at least one of the screener items. For childhood psychological abuse, approximately 11% of the sample fell one *SD* above the sample mean (cutoff criteria indicated by authors of the measure; DiLillio et al., 2010), and thus, classified as experiencing psychological abuse as a child. For childhood neglect, approximately 18.7% of the sample fell one *SD* above the sample mean (cutoff criteria indicated by authors of the measure; DiLillio et al., 2010), and thus, classified as experiencing neglect as a child.

With regard to scores on the partner abuse measure, the sample averaged a total score of 28.98 ($SD = 3.28$). The top and bottom quartiles exhibited a very small range (27.48 and 29.08, respectively), suggesting a small amount of variance in the sample. Further inspection of the Threatened Acts of Physical Violence (mild, moderate, and serious) and Actual Acts of Physical Violence (mild, minor, moderate, and serious) subscales indicated the most frequently endorsed category by the sample was Threats of Mild Physical Violence (e.g., shook a finger/fist at you, made threatening facial gestures, acted like a bully, etc.). Specifically, 19.4% of the sample endorsed at least one item assessing exposure to threats of mild physical violence from a romantic partner. The second highest endorsed category was Actual Acts of Mild Physical Violence (e.g., being pinned down, pushed, shook, or grabbed forcefully). Specifically, 12.3% of the sample endorsed at least one item assessing exposure to actual acts of mild physical violence from a romantic partner. With regard to the frequency of experiencing mild levels of both threats and actual acts of physical violence, the sample primarily endorsed items as occurring either *once* or *a few times*. In fact, only 2.3% of the sample rated any one item of threats or actual acts of mild physical violence as *many times*. Endorsements across the remaining moderate to severe levels of both threats and actual acts of physical violence for the sample were low (i.e., less than 6%).

Tests of Data Normality

Prior to testing assumptions of normality, cases were inspected to ensure all values fell within range and missing cases were analyzed. If a participant failed to answer an item, the individual's score for the scale was not computed. For five of the six measures, the loss of participants was less than 5%, which is considered a small loss of

data. For one of the measures (i.e., partner abuse variable), the loss of data was less than 10%, which also constitutes a small loss of data (Tabachnick & Fidell, 2011). Due to the complicated scoring of the partner abuse variable (e.g., impact weights were calculated into overall scores), mean substitution for missing items was not possible with this specific measure. Therefore, the sample size used for analyses included only complete records (Kline, 2011). In combination with exclusionary participant criteria and missing items, there was a total loss of less than 25% in the data pool. Although undesirable, the remaining number of participants exceeded the minimum number of participants required for adequate power in the analyses.

To screen for univariate outliers, an absolute z-score of +3.29 was utilized (Tabachnick & Fidell, 2011). A total of 13 cases were found to be univariate outliers across four measures. Of those 13 cases, one was an outlier on a second variable. Since all scores were within possible ranges, the cases were retained as they may be representative of actual cases in the population.

Path analysis modeling is not designed to predict a criterion variable; therefore, the assumptions of data linearity and normality were tested using participant number as the criterion (Tabachnick & Fidell, 2011). Multicollinearity was tested and not found to be an issue in the analyses. The Normal Probability Plot was consistent with a distribution that is generally multivariately normal. There was no evidence of heteroscedasticity observed in the analyses. Further inspection of the histogram of residuals revealed no evidence of trending toward kurtosis.

Mahalanobis distance and studentized residuals were used to test for multivariate outliers. Although no cases were found to be potential outliers using studentized

residuals, six cases were identified as potential outliers with Mahalanobis distance with values that exceeded the significant chi square value [$\chi^2(6) = 22.46$]. Inspection of these cases revealed that four of the cases were individuals who scored particularly high on the partner abuse measure. Subsequent analyses indicated these four cases were also found to have *leverage values* classified as risky; thus, influential to the data set (Garson, 2006). In all cases, leverage values were found to be above the .5 criteria for bad problems with leverage. Based on inspection of the data and leverage values for cases of potential multivariate outliers, these cases were judged to be too influential and not representative of the general population (though they were actual cases in the population). Thus, six cases were dropped from the final analyses.

Tests of Hypotheses

Relationship between family dysfunction and disordered eating (Hypothesis 1)

1). To test the relationship between a measure of family dysfunction and disordered eating, the bivariate correlation was inspected (see Table 1). As expected, as perceived levels of family cohesion decreased, self-reported disordered eating on the EDI-III ($r = -.19, p < .01$) increased. Thus, more dysfunctional family relationships (as measured by perceived level of cohesion within the family) are associated with an increase in disordered eating symptoms.

Relationship between family abuse and disordered eating (Hypothesis 2)

To test the relationship between a measure of family abuse and disordered eating, the bivariate correlation was inspected (see Table 1). As expected, as perceived levels of family abuse increased, self-reported disordered eating on the EDI-III ($r = .15, p < .05$)

increased. Thus, experiencing more abusive experiences in one's family-of-origin prior to the age of 18 is associated with an increase in disordered eating symptoms in adulthood.

Effect of family abuse on negative mother commentary and disordered eating (Hypothesis 3). To assess whether negative mother commentary mediated the relationship between family abuse and disordered eating, mediation steps recommended by Holmbeck (1997) were followed. As the relationship between family abuse and disordered eating was already established (see hypothesis 2), a multiple regression analysis predicting disordered eating with family abuse and negative family commentary was conducted. The model significantly predicted EDI-III scores ($F(2, 199) = 16.85, p < .01$), and the amount of variance in EDI-III scores accounted for by family abuse was reduced to near zero ($\beta = .06, p = .377$), and no longer significant. When conducting a path analysis on the mediation model, the fit for the model containing only indirect effects was adequate ($\chi^2 = .791, df = 1, \chi^2/df = .791, CFI = 1.000, NNFI = 1.016, SRMR = .023$, and $RMSEA = .000$ with 90% CI of $.000 - .178$), further supporting the finding that negative mother commentary mediated the relationship between family abuse and disordered eating.

Effect of family dysfunction on family abuse, negative mother commentary, and disordered eating (Hypothesis 4). To assess whether family abuse and negative mother commentary mediated the relationship between family dysfunction and disordered eating, mediation steps recommended by Holmbeck (1997) were followed. As previously reported, there was a significant relationship between family dysfunction and disordered eating ($r = -.19, p < .01$). Next, a multiple regression analysis predicting disordered eating with family dysfunction, family abuse, and negative family

commentary was conducted. The model significantly predicted EDI-III scores ($F(3, 193) = 12.55, p < .001$). After controlling for the variance in EDI-III scores accounted for by family abuse and negative maternal commentary, family dysfunction continued to predict a significant, albeit slightly reduced, amount of unique variance in EDI-III scores ($\beta = -.145, p = .045$). A series of path analyses were conducted to evaluate the potential for family abuse and negative maternal commentary to mediate the relationship between family dysfunction and disordered eating. In the model containing both direct and indirect effects of family dysfunction on disordered eating, the fit of the model was strong ($\chi^2 = .008, df = 1, \chi^2/df = .008, CFI = 1.000, NNFI = 1.080, SRMR = .002, RMSEA = .000$ with 90% CI of .000 - .058, and AIC = -1.992).

When removing direct path between family dysfunction and disordered eating (i.e., the indirect effects only model), the model worsened ($\chi^2 = 4.99, df = 2, \chi^2/df = 2.497, CFI = .960, NNFI = .879, SRMR = .050, RMSEA = .087$ with 90% CI of .000 - .187, and AIC = .995). Tests to determine which parameters to drop or add (using the *Wald* and *Lagrange Multiplier* tests, respectively) in the model were then consulted. The results of those tests indicated that dropping the path between family dysfunction and negative maternal commentary was estimated to improve the model. The results also suggested that the addition of a path between family dysfunction and disordered eating would improve the model. These changes in the model estimated to enhance fit were consistent with the regression analysis in which family abuse and negative maternal commentary did not fully mediate the effects of family dysfunction on disordered eating. The suggested modifications also indicated that the relationship between family dysfunction and negative material commentary was unnecessary for model fit and

accounted for by the relationships between family dysfunction and family abuse and between family abuse and negative maternal commentary. In other words, the changes estimated to improve the model fit indicated that neither the combination of family abuse and negative maternal commentary nor negative maternal commentary alone mediated the relationship between family dysfunction and disordered eating. This final model was run with all appropriate changes from the previous model, and produced a better overall fit ($\chi^2 = .183$, $df = 2$, $\chi^2/df = .092$, CFI = 1.00, NNFI = 1.074, SRMR = .009, RMSEA = .000 with 90% CI of .000 - .055, and AIC = -3.817; see Figure 1).

Relationship between family abuse and partner abuse (Hypothesis 5). To test the relationship between a measure of family abuse and partner abuse, the bivariate correlation was inspected (see Table 1). As expected, as perceived levels of family abuse increased, self-reported experiences of partner abuse on the SVAWS ($r = .18$, $p < .05$) increased. Thus, experiencing more abusive experiences in one's family-of-origin prior to the age of 18 is associated with an increase in experiencing threatened and actual acts of physical abuse within a romantic relationship as an adult. In other words, individuals from a family-of-origin where abuse occurred were more likely to be in a romantic relationship where physical abuse or threats of physical abuse occurred.

Relationship between partner abuse and disordered eating (Hypothesis 6). To test the relationship between a measure of partner abuse and disordered eating, the bivariate correlation was inspected (see Table 1). As perceived levels of partner abuse increased, self-reported disordered eating on the EDI-III ($r = .14$, $p = .02$) increased. Thus, experiencing more threatened and actual acts of physical abuse within a romantic relationship is associated with increased disordered eating symptoms.

Effect of partner abuse on negative partner commentary and disordered eating (Hypothesis 7). To assess whether negative partner commentary mediated the relationship between partner abuse and disordered eating, mediation steps recommended by Holmbeck (1997) were followed. As a weak relationship between partner abuse and disordered eating was already established (see hypothesis 6), a multiple regression analysis predicting disordered eating with partner abuse and negative partner commentary was conducted. The model significantly predicted EDI-III scores ($F(2, 173) = 3.411, p = .03$). However, partner abuse was not significant in the overall model and the amount of variance in EDI-III scores accounted for by partner abuse was further reduced by the addition of negative partner commentary ($\beta = .117, p = .120$), and not significant. When conducting a path analysis on the mediation model, the fit for the model containing only indirect effects was very poor and unacceptable ($\chi^2 = 2.44, df = 1, \chi^2/df = 2.44, CFI = .678, NNFI = .033, SRMR = .047, \text{ and } RMSEA = .091$ with 90% CI of .000 - .242). Thus, negative partner commentary did not mediate the relationship between partner abuse and disordered eating. Inspection of the bivariate correlations reveals that the relationship between partner abuse and partner negative commentary is near zero and is not significant. As such, the independent variable does not predict the mediator, and step two in Baron and Kenny's (1986) steps for testing mediation is not met and explains the poor model fit.

Family dysfunction's effect on disordered eating through abusive relationships in the form of negative commentary regarding appearance from both family and romantic partners (Hypothesis 8). To assess the fit of the overall model, path analyses were run resulting in the following models.

Model 1 (original model). Using EQS software, a model with all six observed variables (family dysfunction, family abuse, partner abuse, negative mother commentary, negative partner commentary, and disordered eating) was analyzed (Figure 2). The fit of the resulting model was unsatisfactory (Model 1, see Table 2 for fit indices). All the fit indices all fell outside the recommended ranges. To improve the fit of the model, the *Wald* and *Lagrange Multiplier* tests were consulted (see Table 3). The results of these statistical tests indicated that adding paths within the model would not significantly improve the fit of the model; however, tests indicated that dropping several paths would improve the overall fit.

Recommendations for the removal and addition of paths within models suggest attending to both empirical (i.e., *Wald* and *Lagrange Multiplier* tests) and theoretical considerations (Kline, 2011); that is, decisions on which paths to remove/add should be justifiable from a theoretical standpoint. Although EQS identified several paths to drop from the initial model, theory was used to guide the removal of specific paths. Of the identified paths to remove, two were direct effects on disordered eating and originated from the abuse variables (family and partner) and fit with the overall theory that specific negative comments mediated the abuse to disordered eating relationship. As such, the paths from family abuse to disordered eating and partner abuse to disordered eating (two paths total) was dropped. Given that these were consistent with expectations that the negative commentary from more specific sources would mediate the relationship between abuse and disordered eating, these modifications were tested as the first alternative model.

Model 1a. With the direct paths from the abuse variables (both family and partner) to disordered eating removed, the fit of the resulting model worsened (Model 1a, see Table 2 for fit indices). Both the *Wald* and *Lagrange Multiplier* tests suggested several paths to change to improve the fit of the model. However, based on theory and the original hypothesis that the relationship between family dysfunction and disordered eating was mediated through abuse and negative maternal commentary, a model without the path from family dysfunction to disordered eating was conducted.

Model 1b. With the path from family dysfunction to disordered eating dropped, the resulting model continued to worsen, and was not considered a good fit between the data and the model (Model 1b, see Table 2 for fit indices; Figure 3). Due to the poor fit of all variations of Model 1 to the data, statistical tests designed to compare the fit among hierarchical models were considered meaningless (Kline, 2011). Although the *Wald* and *Lagrange Multiplier* tests made several recommendations of paths to drop/add from the model, many were not consistent with theory. Furthermore, the modifications would be solely empirically driven, and serve only to maximize the error variance within the model to attain acceptable fit.

Model 2. To improve the fit from the initial model (Model 1), a new model (Model 2) was constructed. This new model included a direct path from negative mother commentary to negative partner commentary and removing paths between the abuse variables and disordered eating, as well as removing the path between partner abuse and negative partner commentary (see Figure 4). In other words, this alternative model reflected the idea that individuals from dysfunctional and abusive families are not only likely to end up in abusive relationships, those who have parents who make negative

comments about their appearance are likely to end up in relationships where they receive negative comments about their appearance. While some of the fit indices improved, the overall fit of the model was not acceptable (Model 2, see Table 2 for fit indices). The *Wald* test identified two paths to drop from the model, one of which was consistent with results from analyses for previous hypotheses in which there was not a direct relationship between family dysfunction and negative maternal commentary about appearance. Instead, family dysfunction had an indirect effect on negative maternal commentary through family abuse. Thus, the path from family dysfunction to negative maternal commentary was dropped. The path analysis also revealed that the path between negative partner commentary and disordered eating was near zero. This implies that having a partner make negative comments about appearance does not add to the prediction of disordered eating after accounting for the relationship of family-of-origin effects on disordered eating. However, because making multiple changes that reflect different theoretical notions at the same time is not recommended (Kline, 2011), a modification of Model 2 was tested in which only the family dysfunction to negative maternal commentary path was dropped.

Model 2a. With the path from family dysfunction to negative maternal commentary removed, the resulting model had some improved fit indices; however, the overall fit of the model was unacceptable (Model 2a, see Table 2 for fit indices). The *Wald* test revealed that dropping paths was not estimated to improve the model (i.e., the test produced no recommendations for model modification). However, the addition of paths was estimated to significantly improve the overall fit. Specifically, a path from family dysfunction to negative partner commentary about appearance was estimated to

improve the fit of the model. Thus, a path from family dysfunction to negative partner commentary was added to the model.

Model 2b. With a path from family dysfunction to negative partner commentary added to the model, the fit of the model continued to improve, and produced a marginal to acceptable fit (Model 2b, see Table 2 for fit indices). The *Wald* and *Lagrange Multiplier* tests made a few recommendations of paths to drop and add; however, the modifications were not expected based on theory to improve the fit of the model.

Therefore, theory was used to guide the modification of the model in order to improve the overall fit. Examination of the model indicated the smallest path coefficients existed between negative partner commentary to disordered eating. Although these two constructs have previously been linked in the literature (Carriere & Kluck, 2014), it appears that by including family-of-origin variables (i.e., family dysfunction and abuse) into the model, the strength between negative partner commentary and disordered eating is significantly reduced (as discussed previously). In other words, once family-of-origin variables are taken into consideration, negative comments made by romantic partners regarding appearance does not account for additional variance in disordered eating. Therefore, the path between negative partner commentary and disordered eating was dropped from the model.

Model 2c (final model). The fit of the resulting model was acceptable (see Table 2 for fit indices for Model 2c). There were no recommendations from the *Wald* test to drop any paths. Inspection of the *Lagrange Multiplier* test results indicated two paths to add to the model. The first recommendation was to add a path from family dysfunction to negative maternal commentary; however, in previous analyses, no significant correlation

was found between the two constructs in this data set (and in previous analyses containing this path resulted in *Wald* test results indicating that the path should be dropped). Secondly, the *Lagrange Multiplier* test recommended adding a path from family dysfunction to partner abuse. As discussed previously, a dysfunctional family environment, in the absence of physical, sexual, and emotional childhood abuse, has not traditionally been associated with victimization as an adult within a romantic relationship. Childhood abuse, and specifically, the severity of abuse, however, has previously been identified as the strongest predictor of adult victimization in a romantic relationship (Fergusson, Boden, & Horwood, 2008). Thus, the recommended paths were not added. Model 2c was accepted as the final model in understanding the etiology of disordered eating in the context of negative appearance-related commentary from family and romantic partners (see Figure 5).

Table 1

Means, Standard Deviations, Reliability, and Inter-correlations of Measured Variables

Measure	2	3	4	5	6	<i>M (SD)</i>	α
1 FACES-IV	-.409**	-.113	-.096	-.146*	-.190*	29.71 (3.94)	.86
2 CAMITOT		.222*	.178*	.129	.150*	1.24 (.97)	***
3 FEFRQ			-.103	.193**	.376**	10.36 (3.75)	.72
4 SVAWS				.058	.142	28.98 (3.28)	.94
5 VCOPAS-P					.164*	12.52 (5.28)	.82
6 EDI-3						29.32 (19.65)	.73

Note. FACES-IV = Family Adaptability and Cohesion Evaluation Scales; CAMI = Computer Assisted Maltreatment Inventory; FEFRQ = Family Experiences Related to Food Questionnaire; SVAWS = Severity of Violence Against Women Scales; VCOPAS-P = Verbal Commentary on Physical Appearance Scale – Partners; EDI = Eating Disorder Inventory-3.

* $p < .05$

** $p < .01$

***Cronbach alpha coefficient was unable to be calculated for CAMI due to the scoring nature of the scale.

Table 2

Fit Indices for Path Analyses of Disordered Eating

Model	χ^2	<i>p</i>	<i>df</i>	χ^2/df	<i>CFI</i>	<i>NNFI</i>	<i>SRMR</i>	<i>RMSEA</i>	90% <i>CI</i>	<i>AIC</i>	$\Delta\chi^2$
Model 1 (initial model)	19.61	<0.01	5	3.9	.85	.55	.08	.13	.07 - .19	9.6	--
Model 1a	25.18	<0.01	7	3.6	.81	.60	.08	.12	.07 - .17	11.2	5.6
Model 1b	30.60	<0.01	8	3.8	.77	.56	.09	.13	.08 - .18	14.6	5.4
Model 2 (initial model)	18.60	<0.01	7	2.7	.88	.74	.06	.10	.04 - .15	4.6	--
Model 2a	18.66	.02	8	2.3	.89	.79	.06	.09	.03 - .14	2.6	.66
Model 2b	12.63	.08	7	1.8	.94	.88	.05	.07	.00 - .13	-1.4	6.03
Model 2c (final model)	13.10	.11	8	1.6	.95	.90	.05	.06	.00 - .12	-2.8	.47

Note. All models presented in the order in which they were run. Adding/dropping of paths, as well as the change in the improvement of fit $\Delta\chi^2$, are in reference to the preceding model. Boldface = accepted final model shown in Figure 5. *CFI* = *Bentler Comparative Fit Index*; *NNFI* = *Bentler-Bonnett Non-normed Fit Index*; *SRMR* = *Standardized Root Mean Square Residual*; *RMSEA* = *Root Mean Square Error of Approximation*; *AIC* = *Akaike Information Criterion*.

Model 1a (dropped paths: family abuse → disordered eating; partner abuse → disordered eating)

Model 1b (dropped path: family dysfunction → disordered eating)

Model 2a (dropped paths: family dysfunction → negative maternal commentary)

Model 2b (added path: family dysfunction → negative partner commentary)

Model 2c (dropped path: negative partner commentary → disordered eating)

Table 3

Wald and Lagrange Multiplier Test Recommendations for Models 1 and 2

Model	<i>Wald</i> test (paths to drop)	Lagrange Multiplier test (paths to add)
1	FD to NMC Family abuse to DE NPC to DE Partner abuse to DE	FD to NPC FD to partner abuse
1a	FD to NMC NPC to DE Partner abuse to NPC	FD to NPC FD to partner abuse
1b	FD to NMC Partner abuse to NPC NPC to DE	FD to NPC FD to DE FD to partner abuse
2	FD to NMC NPC to DE	FD to NPC FD to partner abuse
2a	NPC to DE	FD to NPC FD to NMC FD to partner abuse
2b	FD to NPC	FD to NMC FD to partner abuse
2c	None	FD to NMC FD to partner abuse

Note. *DE* = disordered eating; *FD* = family dysfunction; *NMC* = negative maternal commentary; *NPC* = negative partner commentary.

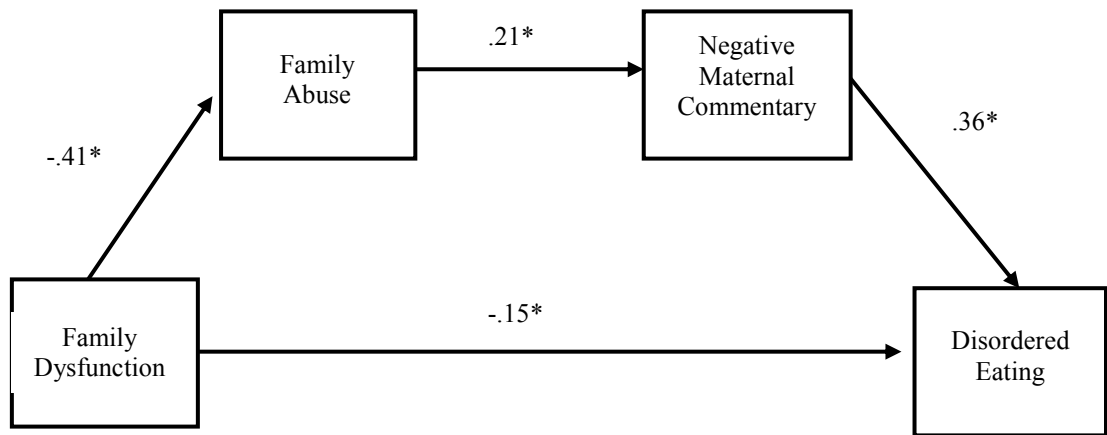


Figure 1. Standard Coefficients for Family Variables (Hypothesis 4).

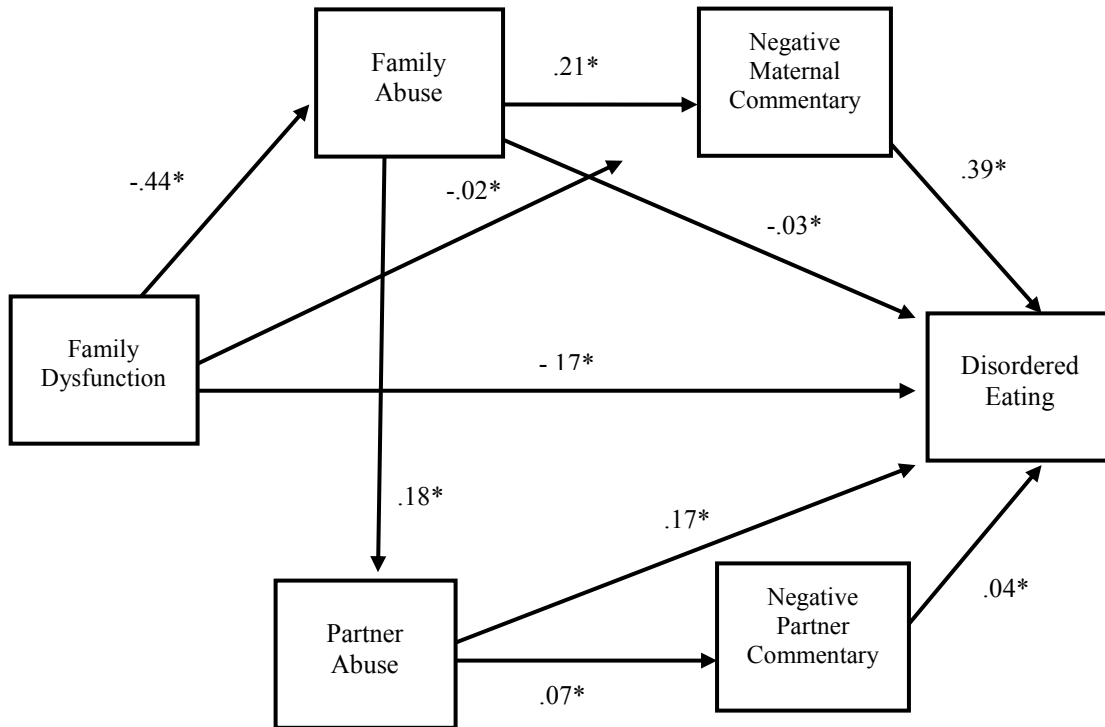


Figure 2. Standard Coefficients for Model 1.

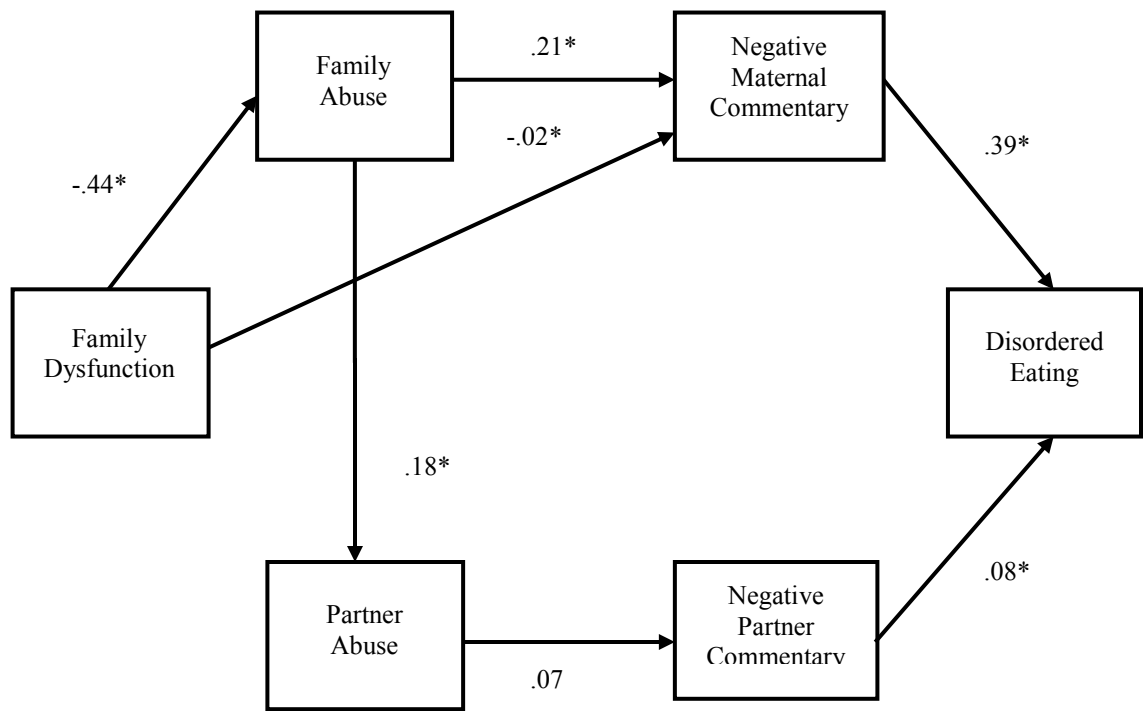


Figure 3. Standard Coefficients for Model 1b.

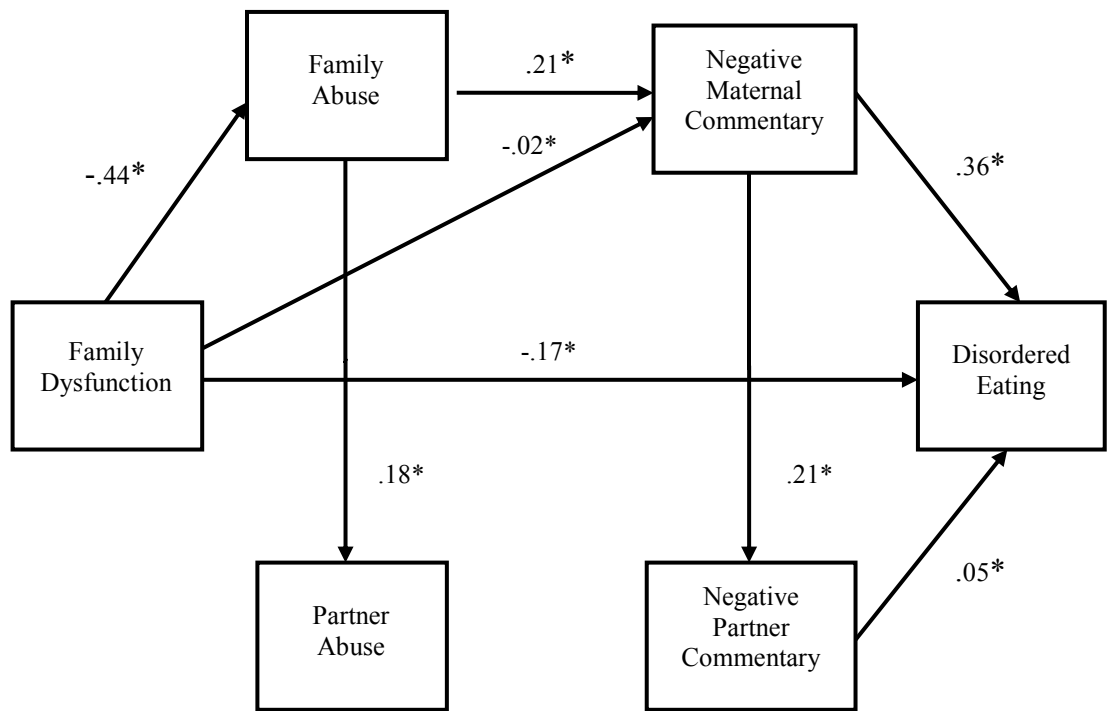


Figure 4. Standard Coefficients for Model 2.

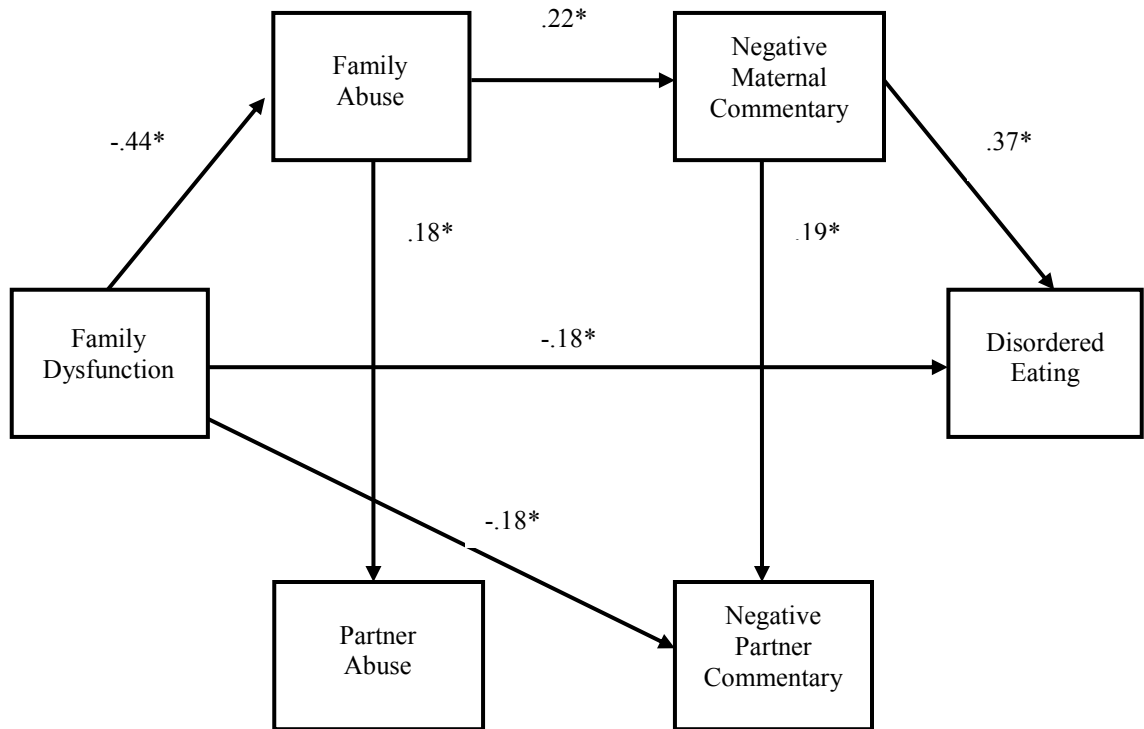


Figure 5. Standard Coefficients for Model 2c (Final Model).

CHAPTER 5

Discussion

Summary of Findings

The purpose of this study was to examine an interpersonal model for the development of disordered eating attitudes and behaviors within family and romantic relationships in a non-clinical sample of female college students. Previous research has identified the role of family dysfunction and family abuse as significant yet non-specific factors in the development of eating pathology; therefore, this study sought to investigate the role of negative maternal commentary regarding weight and appearance as the specific family factor accounting for the relationship between general dysfunction and abuse in the home and disordered eating in daughters.

Results from this study supported the hypothesis of a relationship between family dysfunction and disordered eating; that is, as perceptions of dysfunction increased within the family-of-origin, levels of disordered eating attitudes and behaviors also increased. Likewise, a small but significant relationship was also observed between family abuse and disordered eating. Levels of disordered eating attitudes and behaviors increased as perceived levels of childhood abuse (i.e., neglect, exposure to IPV, sexual, physical, and emotional abuse) within the family-of-origin increased. Consistent with the hypothesis, negative maternal commentary regarding weight and appearance was found to fully mediate the relationship between family abuse and disordered eating. These results

suggest that while an abusive family home environment is associated with the development of disordered eating in offspring, negative maternal appearance-based commentary may be the specific factor accounting for the relationship. In other words, a family environment marked by the presence of child abuse, neglect, or parental IPV may be likely to create dysfunctional conditions within the home in which negative and critical discourse among family members is more likely to occur. In particular, negative family discourse focused on the appearance or weight of an offspring may serve as the specific link with the development of disordered eating.

Surprisingly, results did not support the hypothesis that negative maternal commentary would mediate the relationship between family dysfunction and disordered eating, as has previously been found in the literature (e.g., Kluck, 2008). The combination of family abuse and negative maternal commentary also did not account for the relationship between family dysfunction and disordered eating. The absence of mediating variables in this relationship is unexpected and the reason remains unclear; however, there could be several explanations for this finding. Previous examinations of communication patterns within families related to appearance and weight have focused on various avenues of maternal influence as it relates to eating pathology in daughters (e.g., maternal modeling of eating and dieting practices, level of maternal body satisfaction, disapproval of daughters' figure, negative appearance-based commentary, etc.); however, the present study focused only on the role of negative appearance-based commentary. Therefore, it is possible that the commentary variable did not fully capture all the ways in which mothers can influence daughters' attitudes and behaviors related to eating. Secondly, the present study did not assess paternal or sibling commentary related

to appearance and weight of daughters; thus, the commentary variable may have been able to explain more of the relationship between family dysfunction and disordered eating by including commentary from all family members within the home.

Similar to the mechanisms in which familial abuse can create an environment in which negative appearance-related commentary can emerge and predict disordered eating in daughters, a parallel process was also investigated within the context of romantic relationships. The results supported the hypothesis that perceptions of higher levels of childhood abuse would be associated with experiencing higher levels of threats and actual incidents of physical abuse within a romantic relationship as an adult. In other words, an individual is more likely to be involved in a romantic relationship marked by threats or actual acts of physical violence if they experienced abuse and/or neglect within their family-of-origin. Results also supported the hypothesis of a small yet significant relationship between partner abuse and disordered eating. That is, a romantic relationship characteristic of threats or actual acts of physical violence was associated with higher levels of disordered eating attitudes and beliefs. Although it was hypothesized that negative partner commentary regarding appearance and weight would mediate this relationship, it was not supported by the results.

The mechanism by which disordered eating operates through a physically abusive relationship (or at least one with threats of physical violence) remains unknown. One possible reason for the lack of mediation could be the nature of the partner abuse variable measured in this study, as abuse was restricted to only threats and actual acts of physical violence. Thus, inclusion of a more comprehensive abuse variable reflective of multiple dimensions of abuse, and in particular, psychological abuse, may have resulted in

negative commentary from a romantic partner better explaining the relationship between partner abuse and disordered eating. Moreover, the lack of a relationship between partner abuse (i.e., threats and actual acts of physical violence) and negative partner commentary may be reflective of the differing forms of abuse assessed (physical vs. psychological). It may be that even in the absence of negative appearance-based commentary from partners within a relationship, disordered eating may exist; such behaviors may serve as a generalized coping mechanism, reflect a desire to become smaller or invisible, or as a way of appearing less appealing to others if sexual abuse is involved (Morrison et al., 2009; Wonderlich et al., 1997).

When examining all of the effects of family and partner variables in the original predictive model (Model 1; see Figure 2) of disordered eating, the model fit extremely poorly to the dataset. Despite modifications based both on theory and statistical tests to improve the original model's predictive power of disordered eating, the fit of the model remained poor. Therefore, an alternative theoretical model (Model 2; see Figure 4) was constructed to reflect theory, previous research findings, and statistical recommendations from the original model. After further modifications, a variation of the alternative model (Model 2c; see Figure 5) resulted in an acceptable fit to the dataset.

The final model conceptualized individuals originating from home environments marked by abuse and dysfunction as more likely to end up in a romantic relationship marked by threats or actual acts of physical violence. The final model also reflected the idea that individuals receiving negative comments from their mothers about their appearance and weight are more likely to be involved in a romantic relationship in which they experience similar negative comments from their partner. Perhaps analogous to the

intergenerational transmission of family violence and abuse, children or adolescents that grow up receiving negative comments about their appearance may learn to view these experiences as normative within close relationships or even evident of caring relationships (because such a view enables them to avoid experiencing dissonance that would come from the idea that loved ones intentionally make hurtful comments; Carriere & Kluck, 2014). Thus, as these expectations are applied to romantic relationships in adulthood, an individual might be more likely to tolerate or maintain a relationship with a partner critical of their appearance or weight (Stith et al., 2000).

Interestingly, the model suggests that receiving negative comments about appearance and weight from a romantic partner does not add to the model's predictive power of disordered eating once accounting for the relationship of family-of-origin effects on disordered eating. Such findings point to the formative role of the mother and the significance of negative family discourse focused on outward appearance in the development of disordered eating. Appearance-based comments have the potential to transmit powerful messages both implicitly and explicitly as to which physical characteristics (i.e., being thin) are deemed most desirable within the home and the mainstream culture. In fact, the mother may be the vehicle in which mainstream messages emphasizing a thin body shape and unrealistic standards of beauty are conveyed to daughters within the family unit (Cooley et al., 2008). Over time, the impact of such appearance-based messages has the potential to be far-reaching as daughters may internalize thinness ideals, and consequently, become preoccupied with weight, dieting, and excessive thinness. Although not examined in this study, the mother's comments about her own body may also serve to underscore what matters for women and the value

of adapting certain (although not necessarily healthy) ideals (Haines, Neumark-Sztainer, Hannan, Robinson-O'Brien, 2008).

As these individuals enter adulthood with disturbed body images, a negative body schema may serve to maintain the mental representation of their bodies by deciding what information to attend to or remember (Padesky, 1994). Thus, individuals with schemas related to feeling unattractive or overweight, for example, are more likely to focus on bodily flaws and negative messages related to their body (Kearney-Cooke & Striegel-Moore, 1997). In the context of a romantic relationship, an individual might be more likely to seek out a partner in which they experience negative comments regarding weight or appearance (following similar experiences in their family-of-origin), as these messages serve to confirm their negative body schema. That is, such comments are accepted as fact and more likely to be endured in the relationship because they are consistent with the individual's image of their body and consistent with prior experiences in which loved ones say negative things about how someone looks out of caring concern. Commentary from partners may also serve to prime individuals to more negatively recollect similar comments from the mother (Hanna & Bond, 2006).

Thus, it may partially explain findings that suggest once the effects of the family on disordered eating are accounted for in the model, negative appearance-based comments from romantic partners did not add to the model's predictive power of disordered eating. In other words, negative commentary from a romantic partner that is merely an echo of negative appearance-related messages received from the mother in the family-of-origin does not serve as an additive influence in the development of disordered eating attitudes and behaviors.

Limitations

The present study contains several important limitations that warrant discussion. First, the design of the study was correlational in nature. Thus, causality cannot be inferred from the present study. Based on the design, it is unclear whether family variables, such as dysfunction, abuse, or maternal commentary, caused disordered eating in the sample. Similarly, it is also unclear as to whether disordered eating behaviors in turn exacerbated or caused dysfunction, abuse, or negative appearance-related comments within the home. That is, the true relationship among family environment and disordered eating attitudes and behaviors may be bidirectional in nature (Woodside, Shekter-Wolfson, Garfinkel, & Olmstead, 1995). Conversely, a similar bidirectional relationship may also be true for the role of partner commentary and disordered eating. It is equally likely that individuals with a negative body image or those that engage in disordered eating behaviors could have contributed to negative comments made by partners, or that negative partner comments contributed to the occurrence of disordered eating attitudes and behaviors. For example, one can imagine an individual who constantly criticizes her appearance causing her partner (who hears these statements) to become more focused on her appearance as well.

Secondly, the present study was also limited by the homogeneity of the sample population, which was comprised of a heterosexual, predominantly Caucasian, college-age female population. There was also homogeneity as it related to the socioeconomic status of the sample. Thus, the theoretical model developed in this study to predict disordered eating may not generalize to other populations that differ with regard to age, gender, ethnicity, and sexual orientation. In fact, researchers have suggested that

disordered eating models used traditionally to assess attitudes and behaviors associated with eating pathology in females may not be as applicable to male populations. That is, unhealthy attitudes associated with body image in men may resemble an extreme desire to appear more muscular or athletic, as opposed to a desire for a thin body type (Lev-Ari & Zohar, 2013). Furthermore, the nonclinical population utilized in this study may also limit the generalizability of the model to clinical eating disorder populations.

Thirdly, the present study did not define the specific terms of what constituted a romantic relationship for participants. Thus, the ambiguity of the term ‘romantic relationship’ is a limitation of the present study. That is, participants may have been involved in casual or non-monogamous form of a romantic relationship (i.e., romantically linked to more than one person at any given time), which limits the generalizability to our understanding of the relationship between partner abuse and commentary and disordered eating in monogamous relationships.

Although romantic relationships can have significant effects on young women in college (such that some experience IPV in these early relationships), it is impossible to draw conclusions on how romantic relationships developed over several years of commitment may relate to disordered eating from this study. The length of duration for some romantic relationships and differential status given to relationships that are legally bound may alter the power of the romantic partner to negatively (or positively) affect the eating and body image of a woman. Moreover, the cross-sectional design of the present study limits our understanding of how relationship dynamics evolve over time, and whether physically abusive experiences occur later in the course of the relationship. In the present study, the majority of the participants were involved in a relationship for 18

months or less. The IPV literature suggests psychological abuse occurs earlier and for longer duration than acts of physical violence in romantic relationships marked by abuse; thus, acts of physical violence within relationships of the participants may not have developed yet within relationships where they will eventually manifest at the time individuals participated in the present study (Thompson et al., 2006). As such, the obtained relationship between scores on a measure of physical abuse within romantic relationships and disordered eating may not reflect the true nature of the relationship between these two constructs. Consistent with this limitation is the low scores on the measure of IPV. Very few participants endorsed any physical violence items and the sample mean was low with little variability observed.

Fourth, the retrospective nature of the present study is also a limitation. Study participants were asked to recall potentially painful or negative experiences from their childhood with regard to the presence of abuse and their home environment, as well as dynamics related to adult romantic relationships. Thus, recollections, or perceived experiences, within past and current relationships may have been negatively biased by a host of variables, including current level of self-esteem, body satisfaction, emotional status (e.g., depressive or anxiety symptoms), or satisfaction within current interpersonal relationships (Eisenberg et al., 2012; Park 2007).

Lastly, results from the present study are also limited due to the childhood abuse variable. The measure administered as part of this study was unable to assess frequency and severity of multiple forms of abuse and instead evaluated presence. Additionally, the partner abuse variable was limited to the measurement of threats and acts of actual physical violence within romantic relationships and did not assess other types of abuse

(e.g., psychological/emotional, sexual, financial, etc.). Although the measure did not assess other forms of partner abuse, such as psychological or sexual violence, it was able to account for the psychological impact of physically violent acts. However, this element of psychological impact may not have adequately overlapped with psychological abuse, of which harsh verbal commentary would be a small part, resulting in a lack of relationship between partner abuse and partner negative appearance commentary. Thus, the measures of abuse used in this study may not have been able to capture such abusive experiences in a truly comprehensive manner.

Strengths of Present Study

The present study was among the first to empirically investigate the effects of family dysfunction, family abuse, and negative maternal commentary on the development of disordered eating simultaneously. Findings confirmed previous investigations within the literature identifying negative appearance-based commentary as the specific pathway in which disordered eating attitudes and behaviors develop in a childhood home marked by problems, in this case childhood abuse.

A second strength of the present study was the inclusion of romantic relationship variables into the predictive model of disordered eating. The contributory role of romantic partners to disordered eating has traditionally been neglected area within the field of body image and disordered eating. Specifically, the role of negative partner commentary related to body dissatisfaction and disordered eating behaviors are not well understood. Examining the effect of negative commentary from both the mother and romantic partner simultaneously in a predictive model provides more of a comprehensive

understanding in how disordered eating attitudes and behaviors develop in young college age women.

An additional strength of the study was the use of empirically validated measures to assess variables. In particular, studies investigating less well-known constructs, such as negative maternal and partner commentary regarding appearance and weight, have traditionally not employed empirically validated measures (Carriere & Kluck, 2014; Kluck, 2008). Researchers have generally relied on their own formulation of items believed to assess the construct of appearance-based commentary; such assessments range in scope from one to several items (Kvalem, von Soest, Roald, & Skolleborg, 2006; McClaren et al., 2004). The lack of empirically validated measures in studies raises possible doubts regarding the reliability and construct validity of the previously designed measures (Strauss & Smith, 2009).

Implications for Future Research

From an interpersonal framework, the present study developed a predictive model of disordered eating based on the specific role of negative appearance-based commentary within both family and romantic relationships. The findings from this study have significant implications for areas of future research regarding appearance-based messages and most importantly, in the interpretations of appearance-based messages (an area not examined in the present study). The manner in which appearance-based messages are perceived and processed can vary greatly across individuals (Park, Calogero, Young & Diraddo, 2010), as well as the emotional reactivity to such messages (Kvalem et al., 2006). At one end of the continuum are individuals that filter verbal and non-verbal messages exclusively through an appearance-based lens. Such individuals have been

found to be particularly sensitive, and even vigilant, to rejection based on perceptions of their own physical appearance or attractiveness (Park, 2007; Park & Harwin, 2010), which has significant implications for the development of possible disordered eating attitudes and behaviors (particularly as a means to alter their attractiveness, thereby avoiding possible rejection). Future research should investigate appearance-based rejection sensitivity as it relates to the interpersonal process of receiving negative appearance-based comments from family (including, mothers, fathers, and siblings) and romantic partners, and eating pathology. Furthermore, exploring appearance-based rejection sensitivity within the context of romantic relationship dynamics would also be significant in understanding if such sensitivity to rejection would change as a function of time, particularly as anxiety related to rejection might be higher in the early stage of the relationship (Park, 2007).

Another area of future research related to findings from the present study would include examining the role of positive appearance-related commentary in the context of close relationships. Previous examinations of positive appearance-related commentary and its relationship to body dissatisfaction and disordered eating have resulted in mixed findings within the family unit, as positive comments have been found to serve as both a protective and risk factor for self-esteem, body image, and body surveillance (Bailey & Ricciardelli, 2010; Calogero, Herbozo, & Thompson, 2009; Herbozo, Menzel, & Thompson, 2013). There is currently little research regarding the role of positive appearance-related commentary in the context of disordered eating attitudes and behaviors within romantic relationships (particularly for women at highest risk for disordered eating during adolescence and young adulthood; Keel et al., 2007). Therefore,

future research should explore whether positive appearance-related commentary from a partner could serve as a buffer to negative commentary related to appearance from other sources or may exacerbate the focus on outward appearance. That is, the question remains as to whether positive appearance-related comments from a partner, in the context of a healthy romantic relationship, could shield an individual from the effects of negative comments originating from peers or the family-of-origin. Conversely, positive comments regarding weight and shape from a partner could be hypothesized to drive an individual's desire to be thin to unhealthy levels to maintain physical attractiveness, and ultimately, the relationship itself (McLaren et al., 2004).

Lastly, future research within the field of disordered eating should employ the use of more diverse research designs, such as longitudinal designs, to better understand the intersection of appearance-based commentary and disordered eating attitudes and behaviors over time. In fact, body image researchers have previously advocated for the use of a lifespan perspective in the examination of a woman's changing body image over the course of her lifetime (Kuh & Hardy, 2002), particularly as roles, responsibilities, and interpersonal relationships change as a function of age (Keel et al., 2007). The power of the family-of-origin to influence a family member's body image may become less as the individual ages and becomes more autonomous. In fact, research within the emerging adulthood literature suggests geographical proximity may play a significant role in the level of closeness young adults (defined as ages 18-25) experience with their family-of-origin (O'Connor, Allen, Bell, & Hauser, 1996). Related, as young adults transition into adulthood, those interpersonal relationships most influential to body image may change as emphasis shifts from the family-of-origin to developing romantic relationships (Arnett,

2000). Further complicating this picture, research also indicates that maternal modeling of dieting during college years is related to disordered eating a decade later (Zalta & Keel, 2006), which may mean that the way a mother interacts with her own body continues to influence daughters as they become mothers whereas other aspects of parental influence become less important. Therefore, future research should aim to clarify the complex interplay between increasing autonomy, the role of appearance-based commentary, and the differential influence of interpersonal relationships over the lifespan.

Although a systematic review has previously concluded that a moderate effect size exists for the relationship between negative weight-based commentary and body dissatisfaction (for review, see Menzel et al., 2010), it remains unknown as to the exact contribution of each source of negative commentary (e.g., mothers, fathers, siblings, peers, dating partners, spouses, strangers, etc.). Furthermore, it is likely that an individual would encounter critical remarks or teasing related to appearance from a variety of sources over the course of their lifetime (and particularly within the context of a negative family constellation); therefore, future research should focus on the cumulative effects of these multiple sources of appearance-related feedback on disordered eating attitudes and behaviors. Related, longitudinal studies investigating appearance-based commentary may be able to assess the frequency at which individuals experience negative comments and the impact of such comments over time. Current evidence is inconclusive as to whether the chronicity of negative comments or the emotional reaction to such negative comments is more harmful to body image development over the lifespan (Cattarin & Thompson,

1994; Annis, Cash, & Hrabosky, 2004), and the relationship is even more unclear as it applies to romantic relationships.

Clinical Implications

There are significant clinical implications related to this study and the assessment and treatment of disordered eating attitudes and behaviors. Results suggested the mother might play a unique role in the development of disordered eating symptoms in young adults through specific commentary related to appearance. In such cases in which young women seek mental health treatment for problematic disordered eating symptoms, a comprehensive assessment of not only clinical symptoms is warranted but also relevant background information. Specifically, clinicians should gather information related to childhood and adult abuse history and family dynamics (e.g., communication, conflict, and cohesion with members) in the family-of-origin while growing up. Inquiries into the presence, frequency, and emotional reaction to negative appearance-related commentary within the family-of-origin during childhood and adolescence may also be warranted.

University and college counseling centers (UCCC) offer a unique setting in which to provide mental health services to young or emerging adults experiencing disordered eating attitudes and behaviors as they relate to interpersonal relationships. As young adults move away from the family-of-origin to pursue higher education, they are faced with considerable psychological and interpersonal challenges during this transitional period to adulthood; a period marked by identity exploration and the pursuit of greater autonomy in education, work, and interpersonal relationships, for example (Arnett, 2004). Although the influence of the family-of-origin was previously believed to be minimal during this period, new evidence suggests a significant interdependence between

the family and young adults (i.e., balancing increasing levels of autonomy while also maintaining close emotional connections with family) throughout college and into adulthood helps facilitate a healthy adjustment and possibly improved mental health of young adults (Valdez, Chavez, & Woulfe, 2013). Therefore, exploring the role of current family climate and quality of relationships (in particular, the relationship with the mother) as they relate to eating pathology may require special therapeutic attention by UCCC clinicians. Furthermore, the prominence of romantic partners in the lives of young adults during this period highlights a possible area of exploration for clinicians as partners relate to the presence of disordered eating symptoms.

When deemed clinically appropriate, incorporating the mother into the treatment process may serve in the best clinical interests of the client. Perhaps as an adjunct to individual therapy, the mother may learn new perspectives and techniques in which to support her daughter through treatment for disordered eating attitudes and behaviors. The mother may also become more of active participant in her daughter's treatment by participating in psychotherapy focused on family constellations as a means to mobilize the family unit as a resource for the daughter (Eisler, 2013). Furthermore, inclusion of the mother into the therapy process might also serve to address possible problematic communication patterns as they relate to the daughter's disordered eating symptoms and rally the family around helping the daughter (Loeb & le Grange, 2009).

Although not examined in this study, the interpretation or meaning derived from receiving appearance-based messages could serve as an intervening point for clinicians in working with clients experiencing disordered eating symptoms. Specifically, the use of a cognitive-behavioral theoretical (CBT) framework may be useful for clinicians in

conceptualizing how disordered eating attitudes and behaviors develop in relation to negative interpersonal messages focused on physical appearance. A CBT perspective may also provide clinicians with specific cognitive techniques in which to explore how appearance-based messages may be interpreted, the manner in which they are incorporated into clients' current body schema (whether negatively or positively), and ways in which to challenge negative messages.

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APPENDIX A



DEPARTMENT OF
SPECIAL EDUCATION,
REHABILITATION, AND COUNSELING

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION SHEET FOR Research Study Entitled Family and Romantic Relationships of College Women

You are invited to participate in a research study that will ask questions about yourself, your family your romantic relationship history, and your perceptions. This study is being conducted by Lucy Johnson, M.Ed., under the supervision of Dr. Annette Kluck, Assistant Professor in the Department of Special Education, Rehabilitation, & Counseling/School Psychology. You were selected as a possible participant because you are an Auburn University undergraduate student, enrolled in a psychology course, age 19 or older, and have been involved in a romantic relationship lasting at least three months within the last year.

If you decide to participate, you will complete an online survey. You will complete this survey from this designated computer lab only. You will be given 1.5 hours of extra credit for your participation in this study. Your answers to the survey will not affect the amount of extra credit you receive. While there are no direct benefits, there is the potential for psychological distress as a result of your participation in this study but this distress is believed to be within the domain encountered in everyday life. To minimize the potential for psychological difficulties, only measures that have been previously used in research will be used in the present study. Also, you will be provided with a list of clinical providers in the area to seek help should you experience any discomfort; however, any treatment must be paid for by you.

Any information you provide throughout the study will be kept confidential. You may choose not to participate in the research at any time by closing your browser window. You may withdraw your data without penalty as long as it is still identifiable. However, once you have submitted your data you may no longer withdraw that data, as it will not be identifiable. Information collected through your participation may be published in a professional journal and/or presented at a professional meeting, etc. If information collected from this study is presented at a professional meeting or published in a journal, no information that could identify you will be presented. Your decision whether or not to participate will not jeopardize your future relations with Auburn University, the Department of Special Education, Rehabilitation, & Counseling, or your standing in your classes.

If you have any questions before, during, or after this research, Lucy Johnson may be contacted by phone at 334-844-5822, by email at johns68@tigermail.auburn.edu or ask002@auburn.edu, or by regular mail at 2084 Haley Center, Auburn University, Auburn, Alabama 36849. For more information regarding your rights as a research participant you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone at 334-844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION LETTER ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW.

YOU MAY PRINT A COPY OF THIS LETTER TO KEEP. YOU ARE NOT PERMITTED TO PRINT ANY OTHER PAGES FOLLOWING THIS INFORMATION LETTER.

Lucy Johnson
January 25, 2012

The Auburn University Institutional Review Board has approved this document for use from 2/17/12 to 2/16/13. Protocol #12-039EP1202

2084 Haley Center, Auburn, AL 36849-5222; Telephone: 334-844-7676; Fax: 334-844-7677
www.auburn.edu/serc

APPENDIX B

Study Protocol Script for Researchers

“Welcome and thank you for participating in this study. Please sit in these designated computers with at least one computer separating you from another participant. Each of you will first read an information letter and complete a set of questionnaires on the computer in front of you.

This research project is exploring common concerns of college women. We are interested in learning about your attitudes, beliefs, and behaviors in a variety of areas concerning relationships, family, and health behaviors.

These questionnaires have been carefully designed. From your scores and those of many other people, we will perform a variety of statistical analyses. From the data provided by you and other people, we will be able to learn more about issues important to college women.

Because this research is scientific in nature, it requires large numbers of people in order to draw scientific generalizations. It is not meant to describe particular individuals in any sense. In fact, your responses will remain completely anonymous. Your name will not be associated with your responses on the computer in any way. You will be asked to print your name on a sign-in sheet that I am about to pass around the room, if you would like to receive extra credit in the psychology course you are currently enrolled. The names on this form will not be linked to your computer responses in any way but rather printing your name is a way to ensure you receive credit in SONA.

“Note: Please make sure that you complete all of the items. Missed items invalidate the entire questionnaire. However, if you find any part of this questionnaire personally offensive, you do not have to finish it. You may withdraw at any time without penalty and still receive credit. I will also pass out a form for everyone listing some treatment providers in the area should you experience any discomfort associated with your participation in this study.

Please remember that there are no ‘right’ answers; the best answer is the one that is most correct for you. It is important that you be as honest as possible when responding.

If you choose to participate in this study after reading the information letter on the computer screen in front of you, you will be asked to complete a set of questionnaires and answer general questions about yourself.”

“Does anyone have any questions?”

(If no questions...) “Please begin by reading the information letter in front of you.”

APPENDIX C

Demographic Information Form

Please provide the following information about yourself by circling the response choice that best describes you or writing your response in the space provided.

Age: _____

Sex: Male or Female

Year in College:

Freshman

Sophomore

Junior

Senior

Other _____

Marital Status:

Single (includes dating relationships & cohabitation)

Married

Divorced

Separated

Widowed

Other _____

Are you currently involved in a romantic relationship? Yes or No

How long have you been in your current romantic relationship:

Less than a month

1 – 2 months

2 – 3 months

3 – 4 months

4 – 5 months

5 – 6 months

6 – 9 months

9 – 12 months

12 months or longer

If not currently in a dating relationship, what has been your longest romantic relationship:

- Less than a month
- 1 – 2 months
- 2 – 3 months
- 3 – 4 months
- 4 – 5 months
- 5 – 6 months
- 6 – 9 months
- 9 – 12 months
- 12 months or longer

How would you classify the status of your relationship?

- “Casual”—we are free to date other people.
- “Exclusive”—we do not date outside of our relationship.
- N/A

At what age were you when you last lived with your parents? _____

Current Living Situation:

- Live Alone
- Live with Roommate(s; includes boyfriends)
- Live with Parents
- Live with Husband
- Other _____

Ethnicity:

- Caucasian
- Hispanic
- African American
- Asian American
- Native American
- Biracial/Multiracial
- Other _____

Sexual Orientation:

- Heterosexual
- Bisexual
- Lesbian
- Transgendered
- Other _____

APPENDIX D

Treatment Facilities in Auburn/Opelika

Thank you for participating in this study. In the event that you or someone you know is in need of psychological treatment, below is a list of treatment providers in the greater Auburn area. Please note that Auburn University and the researchers, Lucy Johnson, M.Ed., and Annette Kluck, Ph.D., offer no guarantees about the quality of the services provided by any of the providers listed below. In addition, if you or the person seeking treatments is a student enrolled at Auburn University, you may be entitled to receive some brief treatment from Auburn University Student Counseling Services.

Auburn-Opelika Psychology Clinic
2127 Executive Park Drive
Opelika, AL 36801
(334) 742-9555

Auburn Student Counseling Services
400 Lem Morrison Drive, Suite 2086 (AU Medical Clinic)
Auburn, AL 36849
(334) 844-5123

Clinical Psychologists PC
248 E. Glenn Avenue
Auburn, AL 36830
(334) 821-3350

WellSpring Counseling Center
2813 Pepperell Parkway
Opelika, AL 36801
(334) 741-8007

Psychological Associates LLC
1915 Professional Circle
Auburn, AL 36830
(334) 826-1699

Magnolia Creek Residential Treatment Center for Eating Disorders
P.O. Box 391

Chelsea, AL 35043
(205) 678-4373 or (888) 7-MAGNOLIA (toll free)

Opelika Addictions Center
2300 Center Hill Drive
Opelika, AL
(334) 742-2130