

THE MEDIATING EFFECTS OF INTIMACY BETWEEN SIBLING NEGATIVE BODY
TALK AND BODY DISSATISFACTION IN FEMALE ADOLESCENTS: THE FORGOTTEN
SIBLING RELATIONSHIP

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The Mediating Effects of Intimacy Between Sibling Negative Body Talk
and Body Dissatisfaction in Female Adolescents: The Forgotten Sibling
Relationship

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ABSTRACT

Body dissatisfaction has become so common that most girls and women will experience it at some point in their lives. Teasing and pressure from family members have been shown to be potent influences in the development of body dissatisfaction. However, most research conducted so far focuses on teasing and pressure from mothers, and neglects siblings altogether. I examined how appearance related teasing and pressure from siblings predicted body dissatisfaction and whether sibling intimacy mediated these relationships. Using survey data from 139 female adolescents, I found that appearance related teasing and pressure from siblings significantly predicted higher levels of body dissatisfaction. I also found significant indirect effects such that sibling teasing and pressure were associated with sibling intimacy, which was associated with body dissatisfaction, although there was no evidence of full mediation. Results indicate that siblings play an important role in the development of body dissatisfaction, and in consequence, eating disorders.

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DEDICATION

I would like to dedicate this to my sisters, Courtney and Stephanie. I am thankful for the bond that we all share, and the light we bring to each other's lives. Thank you both for being supportive, inspiring, and loving. Thank you to my mother, Barbara, and father, Mark; you gave me my best friends.

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CHAPTER ONE. INTRODUCTION

Sibling Relationships and Body Dissatisfaction

Eating disorders are one of the most common psychiatric problems affecting girls and women. Recent studies report that, in their lifetime, approximately 13% of females are afflicted with some type of clinical eating disorder (Allen, Byrne, Oddy, & Crosby, 2013; Stice, Marti, & Rohde, 2013). Based on the National Comorbidity Survey replication, lifetime prevalence estimates of Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED) are 0.9%, 1.5%, and 3.5%, respectively, in adult women (Hudson, Hiripi, Pope, & Kessler, 2007). When examining the population of adolescents, a recent report by Rosen (2010) stated that approximately 0.5 % of adolescent girls in the United States have clinically diagnosed AN, approximately 1 to 2% meet diagnostic criteria for BN, and between 0.8% and 14%, depending on the definition used, is the estimated prevalence for Eating Disorder Not Otherwise Specified (EDNOS). After diagnosis, it is estimated that 75% of individuals will remain affected by the disorder for between 1 and 15 years, with the average duration being between 5 and 10 years (Blodgett Salafia & Jones, 2018). Often, due to complications such as heart or other organ failure, those suffering from an eating disorder will die prematurely (between 5% and 20%); this is the highest mortality rate of all mental disorders (Blodgett Salafia & Jones, 2018; Sharan & Sundar, 2015). These numbers help quantify this serious and pervasive problem present in today's western society.

A particular concern is the increasing prevalence of eating disorders at progressively younger ages (Agency for Healthcare Research and Quality, 2009). Although eating disorders can affect those of any age, the most common age of onset is between 10 and 25 years (Blodgett Salafia & Jones, 2018). In more recent years, there has been a dramatic increase in prevalence of

eating disorders among girls in mid to late adolescence (ages 15 to 19) (Blodgett Salafia & Jones, 2018; Rodgers, Paxton, & McLean, 2014). This is a particularly important time for physical, hormonal, emotional, and cognitive development; the potential effects of an eating disorder during this time can prove to be damaging and even deadly (Vega, Rasillo, Alonso, Carretero, & Martin, 2005). The number of well-documented effects in adolescence include, but are not limited to, skeletal growth delays (Swenne, 2005), endocrine system abnormalities (Katzman, Zipursky, Lambe, & Mikulis, 1997), and cognitive impairment (Chui, Christensen, & Zipursky, et al., 2008; Katzman & Zipursky, 1997). There is increasing concern that some complications at this time— particularly growth retardation, structural brain changes, and low bone mineral density—may become irreversible (Katzman, 2005).

In addition to the percentage of girls and women afflicted with a clinical eating disorder in their lifetime, an even higher percentage display subclinical disordered eating behaviors. In general, individuals suffering from subclinical disordered eating do not meet the strict diagnostic criteria for an eating disorder (Button & Whitehouse, 1981). Nevertheless, they present with serious eating problem behaviors and body weight concerns (Button & Whitehouse, 1981). Individuals with subclinical disordered eating present several psychological symptoms as well, including body dissatisfaction, drive for thinness, depression and perfectionism (Franko & Omiro, 1999). The focus of this study will be on body dissatisfaction.

Body Dissatisfaction

One of the most prominent risk and maintenance factors for eating disorders is body dissatisfaction (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Stice, 2002). Body dissatisfaction refers to negative subjective evaluations of one's physical body, such as figure, weight, stomach, and hips, and is thought to primarily come from sociocultural pressures to be

thin and the desire to fit the Western culture's thin-ideal (Stice & Shaw, 2002). Thus, body dissatisfaction results when an individual is unable to evaluate her physical body in a positive way, which then tends to lead to subclinical disordered eating behaviors and increases that individual's risk for the development, and persistence, of a clinical eating disorder (Sundgot-Borgen & Torstveit, & Skarderud, 2004). Body dissatisfaction potentially leads to dieting and negative affect, which increase the risk for eating disorders (Crisp, 1984; Stice, 2002). In addition, body dissatisfaction may promote compensatory behaviors such as vomiting (Stice, 2002).

Researchers estimate that approximately half of females in Western societies desire to have a thinner body, a beauty ideal set by society, or express concerns about being or becoming overweight (Stice & Shaw, 2002). This frequently-cited research has led many to conclude that there is a 'normative discontent' or an 'epidemic' of body dissatisfaction among women in the United States (Frederick, Jafary, Gruys, & Daniels, 2012; Rodin, Silberstein, & Striegel-Moore, 1984; Tantleff-Dunn, Barnes, & Larose, 2011).

Typically, body dissatisfaction peaks during adolescence (Blodgett Salafia & Jones, 2018). Adolescence is also a time when the female body begins to change dramatically due to puberty, which involves an increase in weight and height, in turn making it almost impossible to meet the societal standard for thinness (Stice & Whitenton, 2002). These pubertal changes and hard-to-achieve societal standards may cause female adolescents to struggle to view their bodies as attractive, which, in turn, promotes greater body dissatisfaction (Ricciardelli, McCabe, Holt, & Finemore, 2003; Clay, Vignoles, & Dittmar, 2005). The belief that appearance is relevant for self-evaluation and evaluation by others leads to an intensified importance of appearance during adolescence (Thompson, et al., 1999). In addition, social comparisons during adolescence are a

significant influence on girls' body image (Clay et al., 2005). Researchers found that girls who frequently compare their appearance to that of their peers, especially if those comparisons are with targets who are perceived to be “more attractive,” are at greater risk of body dissatisfaction (Clay et al., 2005). Therefore, due to the intensified importance of appearance during adolescence, it is essential to focus on influential factors in the development of body dissatisfaction.

Family Influence

The family represents an important social institution through which values, behaviors, and attitudes are transmitted over time (Parke & Buriel, 2008). Research suggests that those closest to an individual may have a particularly powerful influence on what the individual perceives as normative (Killeya-Jones, Costanzo, Malone, Quinlan, & Miller-Johnson, 2007). Families provide important emotional and social support, and, due to the intimate nature of familial relationships, what happens in the life of one family member can influence the lives of other family members (Cox & Paley 1997).

Family systems theory helps explain how family members influence each other. The systems approach helped bring the study of family from focusing on the parent-child relationship to focusing on the family as a social system (Parke, 2004), and is the most prominent approach to understanding families (Cox & Paley, 1997). General systems theory, the grand theory that family systems theory is derived from, focuses on the functioning of a system and its components, and Brown (1974) recognized how, just like in any other social system, the family is the larger system with its members being the components. Patterns of function and dysfunction are shown through the behaviors of the members, and a change in the functioning of one family

member is automatically followed by a change in another family member to keep balance within the system (Minuchin, 2002).

Family systems theory places importance on family functioning and how each member of the family influences one another, whether directly or indirectly (Minuchin, 2002; Cox and Paley 1997; Magnavita 2012). For example, an adolescent with an eating disorder, such as AN or BN, creates an imbalance in the way the family functions (Minuchin 1974). The adolescent with the eating disorder may indirectly influence the husband-wife (or other parental type) relationship by affecting how they interact with each other. This could happen if the adolescent changes the behavior of either parent, which then consequently changes how that parent interacts with the other parent.

Another example could be that the adolescent with the eating disorder indirectly influences her sibling's relationship with their mother by changing the quantity of time that her sibling gets to spend with their mother, thus potentially changing the quality of that relationship. As shown through these two examples, within the context of the family system, multiple subsystems include members of the family in different combinations (e.g., parent-child and siblings, etc.) (Minuchin, 1985). Past research grounded in family systems theory focuses primarily on the parent-child relationship; however, there has been a recent shift as researchers have begun to more closely consider the potency of the sibling relationship subsystem (Seguttuvan, Whiteman, & Jensen, 2014).

Just as family systems theory tends to focus primarily on the parent-child relationship, the tripartite influence model (Thompson et al., 1999) also names parents as one of three primary influences that affect an individual's body image (along with peers and media). These influences are hypothesized to exert their effect on body image and eating disturbance via two primary

mechanisms—appearance comparison and internalization of the thin-ideal. One pathway hypothesizes that influences, such as teasing and pressure, from parents, peers, and the media may lead an individual to engage in more appearance comparison as she seeks additional feedback about her appearance. Similarly, an individual who is teased or pressured to look a certain way (i.e., thin) could come to internalize the belief that being thin is of utmost importance. Engaging in comparison and internalizing the thin ideal then leads to higher levels body dissatisfaction as the individual believes that she is not thin enough or that her appearance does not match the ideal female body type (Thompson et al., 1999; Kerry, van de Berg, & Thompson, 2005). While the family systems theory lays the broader framework for the idea that family members influence each other directly and indirectly, the tripartite model narrows the focus to the specific role of appearance-related conversation and criticism from family members, mainly parents, which may lead to body dissatisfaction in adolescent girls.

The family plays an important role in how sociocultural messages, such as how womens' bodies are viewed in society, to adolescents (Lytton & Romney, 1991; Hill & Franklin, 1998). The influence of family on body image can be transmitted directly via comments about the body or indirectly, via general familial preoccupation with weight or body image (Hardit & Hannum, 2012). Family members may increase adolescents' body image concerns through teasing or increasing pressures to change their appearance (Ata, Ludden, & Lally, 2007). For example, Kluck (2010) found a strong positive correlation between familial criticism, teasing, and encouragement about weight or size with body dissatisfaction in young women aged 16 to 24. In addition, with regard to the mother-daughter relationship, qualities such as a mothers' attitudes and behaviors about eating and their own body may play a crucial role in their daughters' attitudes and behaviors (Bruch, 1973).

Although the Tripartite Model does name the family as a primary source of influence on the development of body dissatisfaction, its main focus is on parents; empirical work examining family influence on body dissatisfaction has followed suit by focusing nearly exclusively on the mother-daughter relationship. However, siblings exhibit strong influences on each other through many different mechanisms, including teasing and pressure. Sibling relationship qualities are significant predictors of a variety of adolescent outcomes (e.g., delinquency, depression, peer competence) above and beyond parent-child relationship quality (Branje, van Lieshout, van Aken, & Haselager, 2004; Criss & Shaw, 2005; Kim, McHale, Crouter, & Osgood, 2007), so it is plausible to hypothesize that the sibling relationship would also have a strong influence in the development of body dissatisfaction.

The Sibling Relationship

Nearly 80% of individuals in the United States have at least one sibling, and relationships between siblings are one of the most stable and long-lasting intimate relationships individuals may have (Kennedy & Kramer, 2008; Dunn, 2002). These relationships are formed before peer relationships and, many times, outlast parent-child relationships (Cicirelli, 1995; Dunn, 2002). The sibling relationship is diverse, and provides opportunities for both negative development (e.g., deviant behavior), as well as positive development (e.g., proper emotional regulation skills) (Gass, Jenkins, & Dunn, 2007; Tucker, McHale & Crouter, 2008). Sibling influences on positive and negative development can begin in early childhood and extend to emerging adulthood, and perhaps beyond (Shortt & Gottman, 1997). In addition to being important influences in patterns of development, siblings can also provide information and support.

For adolescents, siblings can serve as an important source of emotional support, and sibling relationships may have meanings and functions distinctive from those of other social

relationships such as parents, friends, and romantic partners (Buhrmester, 1992). For example, in one study, adolescents rated siblings as a more important source of reliability than their best same-sex friend (Lempers & Clark-Lempers, 1992). Additionally, adolescents have reported that siblings are more available and accessible when dealing with issues such as family problems than friends are (Cicirelli, 1995). Adolescents are more likely to feel understood and respected by their siblings, compared to their same-sex peers, and to share more similar views with their siblings (Moser, Paternite, & Dixon Jr., 1996). Adolescents also feel more comfortable talking with and seeking help from their siblings than from their parents, regarding certain issues like dating, trying out ideas, and sex (Cotterell, 1996; Moser et al., 1996; Tucker, Barber, & Eccles, 1997). Thus, siblings become an important source, other than parents, for adolescents to seek advice about plans and problems for their lives (Seginer, 1998; Tucker et al., 1997). Close relationships with siblings could also serve as a way for adolescents to remain connected to the family, while in the processes of individuating from their dependence on parents.

Positive influences on development, support, and information are most likely to exist in positive sibling relationships (Senguttuvan & Jensen, 2014; Yeh & Lempers, 2004; Criss & Shaw, 2005). A positive sibling relationship is one that possesses high levels of warmth and intimacy (Senguttuvan & Jensen, 2014), versus a negative sibling relationship that possesses qualities such as conflict and hostility (Criss & Shaw, 2005).

During adolescence, positive sibling relationships contribute to higher school competence, sociability, autonomy, and self-worth (Jodl et al., 1999). Some studies have found that positive sibling interactions during adolescence are associated with high levels of personal adjustment (e.g., self-control, coping), and that the influence of siblings may be even greater than that of parents (Seginer, 1998; Yeh, 2001). In comparison, negative sibling relationships are

associated with negative outcomes, including externalizing and internalizing problems (Kim, McHale, Crouter, & Osgood, 2007). Therefore, it is crucial to examine sibling relationships, as negative relationships may serve as a risk factor for maladaptive coping behaviors that later lead to unhealthy behaviors, and positive sibling relationships may serve as a protective factor and promote healthy behaviors.

Sibling Constellations. Siblings have the ability to reinforce each others' beliefs and behaviors while also serving as models of behavior (Patterson, 1984). The strength of reinforcement and the potency of modeling may be affected by sibling gender, age, or both (Bank, Patterson, & Reid, 1996). Social learning principles imply that the sibling dyad constellation has great influence over the function of the sibling relationship, such that older and same-sex siblings are more likely to serve as models (Kim, McHale, Crouter, & Osgood (2007). Older siblings may be viewed as competent and powerful, thus they serve as especially important models (Whiteman, McHale, & Stoli, 2011). Research has found that older siblings are often more likely to influence younger siblings than vice versa (Newman, 1991; Rogers and Rowe, 1988). However, age is not the only influencing factor.

The power of the influence may also be different depending on the gender of the sibling. Adolescents may receive more advice from their same-sex sibling versus advice from their opposite-sex sibling (Branje et al., 2004). Furthermore, adolescents typically self-disclose more with same-sex siblings, which results in higher reports of satisfaction in the relationship (Branje et al., 2004). Females also have been found to report greater intimacy with their siblings than males (Buhrmester, 1992). Tucker, Barber and Eccles (1997) found that female-female sibling pairs reported getting more advice than male-male or mixed-sex sibling pairs. Perhaps adolescents from female-female sibling pairs are more intimate and, therefore, can relate to the experiences of each other more easily than adolescents from male-male and mixed-sex sibling

pairs (Tucker et al., 1997). Both age and gender of sibling may be important in influencing the development of negative outcomes, such as body dissatisfaction.

Sibling Influence on Body Dissatisfaction Development

Many factors that have been identified as contributors to the development of body dissatisfaction. Sibling relationships, despite their centrality in the family and their connection to adolescents' everyday health attitudes and behaviors, have received limited attention (Senguttuvan et al., 2014). Negative sibling relationships may be a risk factor for body dissatisfaction, whereas positive sibling relationships may be a protective factor against the development of body dissatisfaction. The purpose of the present study was to examine sibling relationships and how negative body talk (including teasing and pressure) was associated with body dissatisfaction in female adolescents.

Appearance Related Teasing. Teasing within intimate relationships may increase affection by showing that the individuals are close enough to tease (Baxter, 1992; Eisenberg, 1986). However, previous body image research on female adolescents has indicated that appearance-related teasing contributes strongly to body dissatisfaction (Cash, 1995; Buhrmester & Furman, 1990). In addition to body dissatisfaction, previous studies have reported significant associations between teasing and restrictive eating, self-esteem, thin ideal internalization, and depression (Brown, Cash, & Lewis, 1989; Lieberman, Gauvin, Bukowski, & White, 2001; Shroff & Thompson, 2006). This type of body appearance related teasing is even related to a greater likelihood of eating disorder symptoms (Grilo, Wilfley, Brownell, & Rodin, 1994; Gleason, Alexander, & Somers, 2000; Lieberman et al., 2001).

Teasing can come from a variety of sources, including family members. A study by Neumark-Sztainer and colleagues (2002) found that 28.7% of adolescent girls had been teased by

a family member about their weight. Girls who were teased by family members had higher levels of body dissatisfaction and investment in thinness than girls who reported that they were not teased (Neumark-Sztainer et al., 2002; Levine, Smolak, & Hayden, 1994). Research has found that maternal and (less strongly) paternal teasing (MacBrayer, Smith, McCarthy, Demos, & Simmons, 2001), negative comments, and criticism about appearance or weight were linked with increased disordered eating attitudes and behaviors in daughters (Baker, Whisman, & Brownell, 2000; Smolak, Levine, & Schermer, 1999; Vincent & McCabe, 2000). Teasing and negative feedback about appearance from mothers and fathers were also associated with increased body image dissatisfaction in daughters (Schwartz, Phares, Tantleff-Dunn, & Thompson, 1999). Parental teasing and criticism may communicate to the daughter that her body is unattractive (Kluck, 2010). Furthermore, the odds of being teased by a sibling increases dramatically if an adolescent was teased by either parent (Schaefer & Blodgett Salafia, 2014; Senguttuvan et al., 2014).

Sibling Teasing. Sibling teasing about appearance has been shown to be a significant influence in the development of body dissatisfaction (Rieves & Cash, 1996; Ata & Ludden, 2007). For example, in a study of middle school girls, Keery and colleagues (2005) found that the highest level of appearance-related teasing came from siblings, followed by fathers and then mothers. It has been hypothesized that the male perspective of what features of the female body is deemed unattractive may be communicated by brothers' teasing, while sisters engage in appearance related teasing due to feeling similar pressures to their sisters to be thin (Schaefer & Blodgett Salafia, 2014).

In previous studies, brothers have been identified as the worst teasers within the family in terms of frequency of teasing (Rieves & Cash, 1996; Keery et al., 2005). In addition to having

the highest frequency of reported teasing, brothers' teasing was associated with the highest number of negative outcomes (e.g., higher levels of body dissatisfaction, social comparison, restriction, bulimic behaviors, and depression); specifically, those with older brothers had higher scores on these negative outcomes (Keery et al., 2005). Girls who had older sisters, as well as younger sisters, who teased them had significantly higher levels of body dissatisfaction than those who did not have older or younger sisters that teased them (Keery et al., 2005). Teasing and criticism of appearance, especially by family members like siblings, is social feedback that may foster negative body image development. This social feedback is especially potent due to the pubertal changes experienced at this time, which has ties to more negative self-body evaluations by females, and because of the importance of appearance for self-esteem in females.

Appearance Pressure. The dual-pathway model of Bulimic Pathology (Stice, 2001) posits that perceived pressure to be thin from family, peers, and the media can lead to body dissatisfaction, and that this body dissatisfaction promotes unhealthy dieting behaviors that may progress to bulimic symptoms. More specifically, it has been hypothesized that siblings and parents can pressure girls to lose weight, thereby leading to girls' development of body dissatisfaction (Byely et al., 2000; Gowers & Shore, 2001). Research regarding the direct role of familial pressures and body dissatisfaction has shown support for the direct role of familial pressures on body dissatisfaction (Pike & Rodin, 1991).

Pressure to be thin can be direct, such as verbal encouragement to diet, or indirect, such as modeling (Stice & Whitenton, 2002). Direct negative comments made by one's parents during childhood most strongly predicted the development of women's body dissatisfaction in adulthood (Kerbs, & El-Alayli, 2016). Mothers can act indirectly as both role models and social reinforcers in relation to girls' eating attitudes and behaviors, and in consequence, studies have

found that mothers and daughters were comparable in their body dissatisfaction (Mukai, Crago, & Shisslak, 1994; Rozin & Fallon, 1988).

Maternal pressure is more influential than paternal pressure to be thin, with daughters perceiving lower levels of encouragement to be thin from their fathers (Thelen & Cormier 1995). However, Gross and Nelson (2000) found that negative or critical statements made by fathers to mothers about mothers' weight significantly predicted weight preoccupation in their female adult children. This indirect source of pressure may perhaps lead females to learn to achieve slimness in effort to escape male criticism (Gross & Nelson, 2000).

Siblings, in addition to parents, can exert significant appearance pressures (Rieves & Cash, 1996). Due to siblings being, in most cases, not only family members but also peers, they have a particularly unique influence on each other and typically have more frequent contact with each other than with either peers or parents (Ardelt & Day, 2002). For this reason, pressures from siblings may serve as an important predictor of adolescents' body dissatisfaction.

Sibling Pressure. As stated, pressure can be either direct or indirect. In general, sisters display greater indirect pressures to their siblings due to their role as modeling agents and initiators of dieting during adolescence (Bliss 2000; Vincent and McCabe 2000; Wertheim, Paxton, Schutz, & Muir, 1997). The sibling relationship is one of the first places that adolescents may be exposed to dieting behaviors, and thus individuals pick up on cues from sisters regarding how to relate to their body, and these cues were stronger than those from either their mother or father (Bliss, 2000; Haugen, 2012). These cues from siblings send a strong message about the importance of having a thin body. Sisters appear to contribute significantly to the development of bulimic behavior and dietary restriction through modeling (Coomber & King, 2008). Past research indicates that social comparisons with a younger or older sister during adolescence is

predictive of body image dissatisfaction (Bliss, 2000). In addition to modeling and social comparison, Mukai (1996) found that almost 50% of adolescent girls reported that they have been directly encouraged by both their mothers and sisters to lose weight.

In contrast to sisters' role in indirect pressure, brothers typically engage in more direct pressure, in the form of body-related comments. The comments typically revolve around topics such as weight, body parts, and attractiveness (McCabe, Ricciardelli, & Ridge, 2006). Even if the comments from their brothers were positive in nature, girls still perceived those comments as having an underlying feeling of criticism. In this same study done by McCabe and colleagues (2006), it was found that adolescent girls also received direct body related comments from their fathers, and those negative messages were interpreted by the girls as jokes; further, positive comments from fathers were thought to downplay, or balance out, negative comments. Other studies have shown that fathers and daughters have similar beliefs about thinness (Dixon, Gill, & Adair, 2003; Gross & Nelson, 2000). More specifically, Dixon, Gill, and Adair (2003) found that more than half the girls in their study believed that they would be more attractive if they were thinner, and most fathers reported that slim girls were more attractive than larger girls. Due to the similar comments made by brothers and fathers as well as the underlying feelings of adolescent girls that these comments contain tones of criticism, it may be that boys learn from their fathers that body-related comments are acceptable. Overall, direct and indirect messages of slenderness from siblings reinforce the importance of the thin ideal, leading to greater instance of body dissatisfaction.

Intimacy in the Sibling Relationship

Intimacy is comprised of components such as affection (Berger & Calabrese, 1975), altruism, solidarity (Levinger & Snoek, 1972), a heightened sense of the importance of the

relationship, commitment (Huston & Burgess, 1979), and openness (Altman & Taylor, 1973). A critical component of the development of intimacy is whether or not there is disclosure, or revealing intimate information about oneself (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001). Family members are important providers of intimacy, especially siblings, due to their typical role of providing instruction, guidance, friendship, and mutual understanding (Furman & Buhrmester, 1992; Karos, Howe, & Aquan-Assee, 2007).

As previously stated, sibling relationships are typically life-long, close relationships, and the process of disclosure begins early and continually develops, but especially most quickly over the first twenty years (Greer, Barr, & Lindell, 2015). Sibling disclosures occur with high frequency in childhood and decrease throughout late childhood (Buhrmester & Furman, 1990). Then, though the peer disclosures increase and sibling disclosure decreases, siblings are still reported by adolescents to be their greatest confidants, particularly in the case of warm and trusting relationships, when compared to both parents and peers (Howe, Aquan-Assee, & Bukowski, 1995; Howe, Aquan-Assee, Bukowski, Rinaldi, & Lehoux, 2000). This disclosure is linked to more warmth within the relationship, in turn leading also to greater feelings of intimacy (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001; Buhrmester & Furman, 1987). Consequently, Buhrmester and Prager (1995) argued that the act of withholding disclosure may, in addition to decreasing feelings of warmth, limit intimacy between siblings.

Intimacy is essential to the development of many interpersonal relationships (Clark & Reis, 1988; Sullivan, 1953), and these interpersonal relationships contribute substantially to learning how to provide proper emotional support to others (Buhrmester, 1990). During adolescence, intimacy is thought to provide an environment in which individuals learn how to be sensitive and caring towards others, and this can lead to validation of personal worth (Sullivan,

1953). Intimacy within relationships during adolescence may also be important as these relationships provide support and ways to cope when navigating through bodily changes (Buhrmester & Furman, 1987).

Intimacy and Its Link to Body Dissatisfaction. Previous research has found that disclosure within other close relationships (e.g., parents, friends) are associated with self-worth and competence (Buhrmester, Furman, Wittenberg, & Reis, 1988); given the importance of physical appearance during adolescence, when siblings disclose about body-related issues, this could also have an impact on the value or worth adolescents place on their appearance. Howe et al. (2001) found that when adolescents disclosed positively or negatively about body-related issues to their siblings, they were more likely to report a more intimate sibling relationship. This finding seems consistent with previous research showing that siblings disclose more when they perceive their relationship to be positive and supportive (Howe et al., 2000). Adolescents who are more willing to disclose such personal issues as body-related perceptions with their siblings likely build greater intimacy and support within that relationship. Females in particular tend to place greater importance on the quality and intimacy of close relationships (Branje, Van Lieshout, Van Aken, & Haselager, 2004; Furman & Buhrmester, 1992). This greater intimacy may serve as a protective factor against the adolescent's own negative body-related views.

Although higher levels of disclosure foster greater intimacy between siblings, body related disclosure could potentially be seen as indirect pressure. Specifically, the more siblings disclosed about positive or negative body issues to adolescents, the lower the adolescent's body esteem became (Howe et al., 2001). Additionally, positive body related disclosure by siblings was particularly problematic for girls and younger siblings. These results may be due in part to societal pressures for girls to compete with others to obtain certain beauty standards (Poran,

2006). It could be that girls who receive a large amount of disclosure about their sibling's positive body image feel a greater sense of competition or envy with their sibling. As a majority of adolescent girls rate attractiveness as an important quality (Harter, 1986), continued disclosure of positive aspects of siblings' bodies may lead to upward comparisons. The combination of the importance of attractiveness and greater upward comparisons may then lead girls to feel worse about their own bodies (Festinger, 1954).

Despite evidence to support their importance in the development of body dissatisfaction, sibling relationships are a relatively understudied area within body image research. A sibling can exert a negative influence in a number of ways. In particular, negative body talk from siblings may decrease feelings of intimacy between siblings, leading to an increase in body dissatisfaction. Intimacy is thought to help create an atmosphere of sensitivity and a space for the proper self-worth, but negative body talk from a sibling goes against this sensitivity and decreases feelings of self-worth. Therefore, negative body talk could decrease perceptions of intimacy within the sibling relationship. This decreased feeling of intimacy could then affect feelings of support and coping needed to help girls navigate bodily changes during adolescence, thus resulting in body dissatisfaction.

Proposed Hypotheses

Family members, particularly siblings, can play a crucial role in the development of body dissatisfaction. However, little research to date has focused on specific influences that sibling relationships may have on the development of body dissatisfaction, particularly during adolescence. The present study seeks to examine the connections between sibling relationships and body dissatisfaction. Aspects of the sibling relationship to be examined include negative

body talk, specifically appearance related teasing and pressure, and intimacy within the sibling relationship.

First, I hypothesized that appearance related teasing and pressure from siblings would result in higher levels of body dissatisfaction. Second, I hypothesized that intimacy would be a mediating factor between sibling appearance-related teasing and body dissatisfaction, as well as between sibling pressure to be thin and body dissatisfaction, among female adolescents (see Figures 1 and 2).

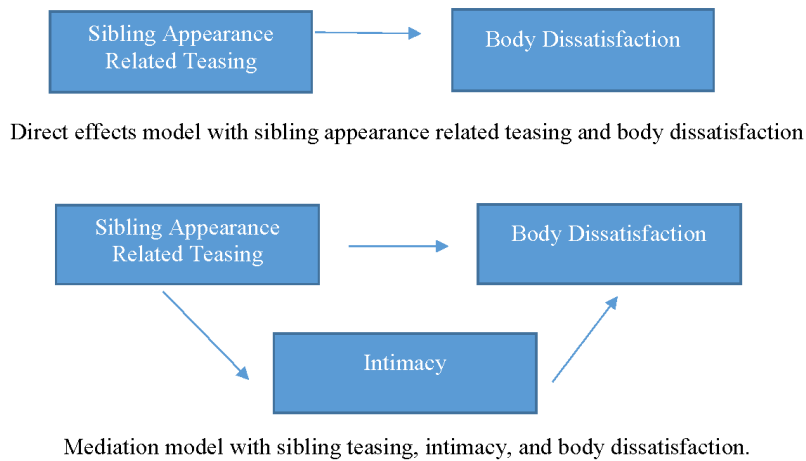


Figure 1. Teasing model.

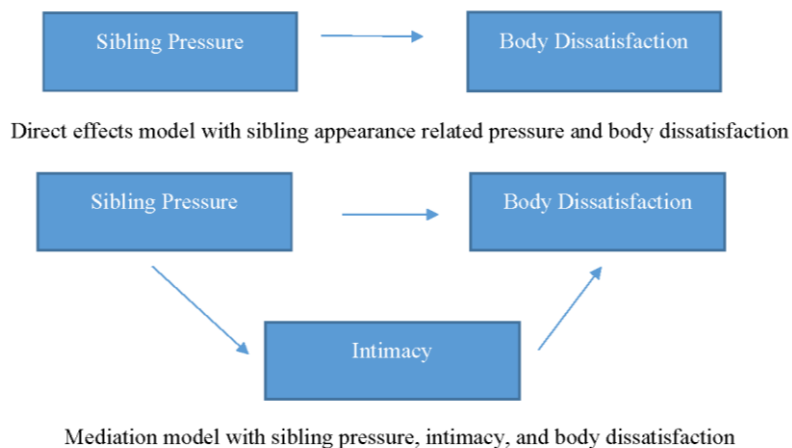


Figure 2. Pressure model.

CHAPTER TWO. METHOD

Participants

Self-report data were obtained from 134 adolescent girls whose ages ranged from 12 to 19 years ($M = 14.76$, $SD = 1.64$). The 134 participants provided information about whether or not they had a brother and whether or not they had a sister; 93 participants had at least one brother while 41 did not, and 73 participants at least one sister while 61 did not. See Table 1 for a summary of the frequencies of the participants who had siblings.

Consistent with the ethnic composition of the city at the time of the study, most of the sample identified themselves as White (93.3%). Participants were asked to self-report their weight and height, and with this information, the average BMI was calculated (weight [kg]/height [m²]) to be 21.67 ($SD = 4.78$). Based on weight-for-height youth classifications of BMI according to the Center for Disease Control and Prevention (as stated in, Kuczmarski, 2002) participants' average BMI scores were considered in the normal range (i.e., clustered around the 50th percentile). See Table 2 for a summary of demographic information on the participants.

Table 1

Sibling Constellations

Characteristic	Frequency	Percentage
Has a Brother	93	69.4
Has a Sister	73	54.5
Has an Older Sibling	71	53
Has a Younger Sibling	78	58.2
Has Older Brother	85	63.4
Has Older Sister	94	70.1
Has Younger Brother	76	56.7
Has Younger Sister	92	68.7
Has Both Young and Older	28	20.9
Has Both Brother and Sister	44	32.8

Table 2

Participant Demographics

Characteristics	Frequency	Percentage
Grade		
7	19	14.2
8	43	32.1
9	27	20.1
10	16	11.9
11	14	10.4
12	15	11.2
Ethnicity		
Black	1	.7
Hispanic	1	.7
Native American	6	4.5
White	125	93.3
Other	1	.7
Body Mass Index		
Underweight	32	23.9
Normal Weight	75	56
Overweight	16	11.9
Obese	7	5.2

Procedure

Students from a middle school and high school in a Midwestern city were recruited through flyers and parental consent forms distributed at the school. Participants under the age of 18 who returned parental consent forms were then invited to complete assent forms and a packet of surveys. Individuals aged 18 or older did not complete parental consent forms but filled out assent forms and surveys. Adolescents completed these surveys before or after school, and this process took 1-2 hours. In compensation for their participation, participants received a \$25 gift card to a local mall.

Measures

Intimacy in Sibling Relationship. In the present study, intimacy in the sibling relationship was examined using the Intimacy subscale of the Sibling Relationship Questionnaire

(SRQ) (Buhrmester & Furman, 1990). Participants were prompted to think of one sibling and answer the questions about this sibling. Information of sibling gender and age was gathered in order to examine the type (same-sex vs. mixed-sex) of sibling relationship. This scale consisted of 3 items, and all items were rated on a 5-point Likert-scale ranging from 1 (*hardly at all*) to 5 (*extremely much*), with higher scores indicating greater feelings of intimacy. A sample item was: *How much do you and this sibling tell each other everything?* The Warmth scale, which consists of the Affection, Companionship, Intimacy, Admiration of and Admiration by Sibling subscales of the SRQ, had a Cronbach's alpha of .93 in a sample of adolescents (Buist & Vermande, 2014). In this study, we focused specifically on the Intimacy subscale, which was reported to have a Cronbach's alpha of .75 in a previous study of adolescents (Alkema, 2013). Additionally, in a study with adolescent females, Cronbach's Alpha of the Intimacy subscale was .87 (Whetten, Williamson, Heo, Varnhagen, & Major, 2010). In the present study, Cronbach's alpha was .94.

Teasing and Pressure to be Thin. The Perceived Sociocultural Pressure Scale (Stice, Ziemba, Margolis, & Flick, 1996) was used to measure both the amount of teasing and pressure they felt from their siblings to be thin. Participants were prompted to choose the answer that best fits how often certain things happen with their siblings. The original scale was modified to include specific items on siblings. As reported by Stice and Bearman (2001), the original scale showed had a Cronbach's Alpha of .85 among female adolescents.

All items used in the present study were rated on a 5-point Likert-scale from 0 (*never*) to 4 (*always*), coded such that higher scores indicating greater perceived teasing and pressure. A single item was used to measure sibling teasing. Items were meant to assess teasing and pressure that came from their siblings, and did not measure teasing and pressuring from themselves to their sibling. This single item was: *"My sibling teases me about my weight or body shape."*

Three items were used to assess perceived pressure to be thin from siblings. Sample items included: *“I’ve felt pressure from my siblings to lose weight,”* and *“I’ve noticed a strong message from my siblings to have a thin body.”*

Body Dissatisfaction. Body dissatisfaction was assessed with the 9-item Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI; Garner, 1991). Participants were prompted to choose the answer in each column that best applied to themselves. All items were rated on a 6-point scale ranging from 0 (*never*) to 5 (*always*), coded such that higher scores indicated greater body dissatisfaction. Sample items included: *“I think that my stomach is too big”* and *“I think that my thighs are too large.”* The EDI is related to the Body Shape Questionnaire and the Eating Attitudes Test (EAT), providing evidence of construct validity ($r = .82$, $r = .50$; Garner, 1991; Gross, Rosen, Leitenberg, & Willmuth, 1986). In a study with adolescent females, Cronbach’s alpha was .83 for the Body Dissatisfaction subscale (Sim & Zeman, 2006). Cronbach’s alpha in the present study was .96.

CHAPTER THREE. RESULTS

Analysis Plan

Past research testing mediation models has framed their analyses on the classic work of Baron and Kenny (1986). The Baron and Kenny (1986) mediation method utilizes linear and multiple regressions to test the direct and indirect paths between variables, and demands a significant direct effect in order to continue on with testing indirect effects. However, a more contemporary approach to testing mediating models, Hayes' PROCESS macro, has been designed (Hayes, 2012). Instead of conducting individual linear and multiple regressions to test for mediation, this program allows for the simultaneous analysis of direct and indirect effects. Therefore, to test the mediating effect of intimacy on the relationship between sibling teasing and body dissatisfaction, and the relationship between sibling pressure and body dissatisfaction, Hayes' process macro was used (Hayes, 2012; Hayes, 2017).

To test my first hypothesis, I separately examined the direct effects of both sibling teasing and pressure on body dissatisfaction. To test my second hypothesis, mediation analyses were conducted with sibling teasing and sibling pressure as independent variables, intimacy as the mediating variable, and body dissatisfaction as the outcome variable. One mediation analysis was conducted for each sibling variable paired with body dissatisfaction, with intimacy included as a mediator. Mediating models were then re-tested using only normal and overweight BMI groups.

Hayes' macro process was also used to test for the moderating effects of sibling gender and sibling age on the relationship between sibling teasing and body dissatisfaction, and to test for moderating effects between sibling pressure and body dissatisfaction.

Results

Descriptive statistics for all study variables are presented in Table 3, and intercorrelations between all study variables presented in Table 4. Scores on body dissatisfaction were similar to those observed in other studies that used adolescent samples (e.g., Dunstan, Paxton, & McLean, 2017), whereas scores for intimacy in the sibling relationship were higher than those in other studies with adolescents (e.g., Van Der Vorst, Engels, Meeus, Deković, & Van Leeuwe, 2007), and scores for teasing and pressure were lower in our sample when compared to other studies of adolescents (Rodgers, Paxton, & McLean, 2014). Direction of our study correlations were all as expected.

Table 3

Descriptive Statistics of Study Variables

Variable	M	SD	Potential Range	Actual Range
Body Dissatisfaction	20.53	10.74	0 - 45	2 - 45
Intimacy	6.95	2.10	3 - 15	3 - 11
Sibling Teasing	.72	1.3	0 - 4	0 - 4
Sibling Pressure	1.10	2.62	0 - 12	0 - 12

Table 4

Correlations among Study Variables

Variable	1	2	3	4
1. Sibling Teasing	--	.28**	-.22*	.26**
2. Sibling Pressure		--	-.48**	.27**
3. Intimacy			--	-.29**
4. Body Dissatisfaction				--

Note. *p<.05, **p<.01

Mediation Model Testing

Direct Effects. Direct effects for sibling teasing and pressure on body dissatisfaction are presented in Table 5. Direct effects for all study variables were significant. Positive direct effects

on body dissatisfaction were found for both teasing (1.6) and pressure (1.34). Higher reports of both teasing and pressure from siblings were associated with higher body dissatisfaction scores.

Negative direct effects on body dissatisfaction were found for intimacy in both our teasing model (-1.30) and pressure model (-1.08). As intimacy scores for the sibling relationship increased, body dissatisfaction scores decreased. In addition, negative direct effects on sibling intimacy were found for teasing (-.31) and pressure (-.34). As teasing and pressure within the sibling relationship increased, intimacy decreased.

When sibling gender and age were added as moderating variables between sibling teasing and body dissatisfaction and sibling pressure and body dissatisfaction, results showed no significant moderating effects. Neither sibling gender nor age strengthened or weakened the relationship between the two study variables. Thus, below I focus on our models of indirect effects excluding moderating variables.

Indirect Effects. Indirect effects on body dissatisfaction between sibling variables and intimacy are presented in Table 6. First, I tested the mediating effects of intimacy on the relationship between sibling teasing and body dissatisfaction. I found significant indirect effects, with the direct effect of teasing on body image remaining significant throughout testing (see Figure 1). Higher levels of teasing were associated with decreased feelings of intimacy, which was then associated with higher body dissatisfaction.

Second, I tested the mediating effects of intimacy on the relationship between sibling pressure and body dissatisfaction. Similar to our teasing model, I found significant indirect effects, with the direct effect of teasing on body dissatisfaction remaining significant throughout testing (see Figure 2). Higher levels of pressure were associated with decreased feelings of intimacy, which was then associated with higher body dissatisfaction.

To ensure that girls' BMI was not influential in the models, I re-tested the models using only participants that fell into the normal and overweight BMI groups. Restricting the models to only include normal and overweight participants did not result in full mediation, nor did it change the models to suggest that no mediation had occurred. Thus, I decided to include all participants in the mediation models, regardless of BMI.

Table 5

Model One Direct Effects of Sibling Variables Teasing and Intimacy and Body Dissatisfaction

Path	Coefficient	t	p-value
Outcome: Body Dissatisfaction Predictor: Sibling Teasing	1.60	2.39	.02
Outcome: Sibling Intimacy Predictor: Sibling Teasing	-.31	-2.41	.02
Outcome: Body Dissatisfaction Predictor: Sibling Intimacy	-1.30	-2.75	.01

Model Two Direct Effects of Sibling Variables Pressure to Be Thin and Intimacy and Body Dissatisfaction

Outcome: Body Dissatisfaction Predictor: Sibling Pressure	1.34	3.19	.00
Outcome: Sibling Intimacy Predictor: Sibling Pressure	-.34	-4.70	.00
Outcome: Body Dissatisfaction Predictor: Sibling Intimacy	-1.08	-2.18	.03

Table 6

Results for the Indirect Effects between Sibling Variables and Body Dissatisfaction, as Mediated by Intimacy

Independent and mediating variables	Coefficient	95% CI lower	95% CI upper
Sibling Teasing			
Body Dissatisfaction	.41	.06	.87
Sibling Pressure			
Body Dissatisfaction	.37	.08	.7

CHAPTER FOUR. DISCUSSION

The purpose of the present study was to examine the connection between aspects of the sibling relationships and body dissatisfaction. Specifically, I focused on sibling appearance related teasing and pressure, as well as intimacy within the sibling relationship. Intimacy was examined as a mediator for the relationship between sibling teasing and body dissatisfaction, as well as between sibling pressure and body dissatisfaction.

Summary of Findings

Sibling Teasing. Study results showed that sibling appearance related teasing was significantly related to body dissatisfaction among female adolescents. As the perceived level of teasing increased, body dissatisfaction also increased. Past studies have similarly demonstrated a strong connection between appearance related teasing and negative outcomes among girls, such as body dissatisfaction, disordered eating, and increased social comparison (e.g., Keery, Boutelle, Van Den Berg, & Thompson, 2005; Neumark-Sztainer, Falkner, Story, et al., 2002). All of these aforementioned outcomes increase an individual's susceptibility to developing a later eating disorder.

Teasing, especially by family members, is common during adolescence and may come across as harmless, and even normative, in these close relationships (Eisenberg, Neumark-Sztainer, & Story, 2003). However, within body image research, any teasing relating to the appearance of an individual's body is considered negative (Cash, 1995). Teasing about appearance draws attention to body features, shape, and size, and these messages may then be internalized by the teased individual. Internalizations may then lead an individual to engage in unhealthy weight-control techniques (e.g., dieting, purging) and develop distortions about the appearance of her body, which then leads to dissatisfaction with appearance. Results from the

present study support the idea that teasing within the sibling relationship can have a negative impact on the teased individual's evaluation of her appearance.

Sibling Pressure. Results also showed that sibling appearance related pressure was significantly related to body dissatisfaction among female adolescents. As the perceived level of pressure increased, the level of body dissatisfaction also increased. Appearance related pressure can come in many different forms, from direct comments about appearance to modeling to indirect comments about others' bodies in front of the adolescent (Stice & Whitenton, 2002). Past research has similarly shown that when siblings engage in these different forms of pressure, there is a strong relationship to an individual's development of subclinical symptoms of eating disorders, such as body dissatisfaction (Byely et al., 2000; Gowers & Shore, 2001).

The appearance and diet-oriented American culture often targets adolescents as potential consumers of appearance-altering techniques products. These can contribute to unhealthy and unrealistic body evaluations. Furthermore, research shows that these larger cultural ideals are reinforced by those in the adolescent's immediate environment, such as family members and peers (Boyes, Fletcher, & Latner, 2007). Negative body weight talk and dieting among those that serve as models (e.g., family members and peers) have been shown to be related to body image concerns in female adolescents (Thompson et al., 1999). Siblings are both familial and peer in nature; thus, pressures, including modeling and discussing appearance concerns, making appearance comparisons, and judging the appearance of others, might exert a unique and powerful influence on girls' body dissatisfaction.

Intimacy as a Mediator. Although intimacy did not fully mediate the relationship between sibling teasing and pressure on body dissatisfaction, there were significant indirect effects. First, girls who perceived more teasing from their siblings reported lower feelings of

intimacy in the sibling relationship. Siblings who are teased may feel a sense of mistrust towards their sibling, and in consequence, decrease the amount that they disclose to their sibling.

Disclosure is a vital in the continuous building of intimacy in a sibling relationship, and if the teased individual does not disclose to their sibling, this may decrease feelings of intimacy (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001; Buhrmester & Furman, 1987).

Similarly, girls who felt more pressure from their siblings reported lower feelings of intimacy in the sibling relationship. This finding suggests that female adolescents who experience pressure from their siblings, such as negative comments and modeling negative behaviors, appear to view the relationship with their sibling as less intimate. Adolescents are particularly sensitive to how others judge and perceive their bodies and, because the sibling relationship is both familial and peer in nature, adolescents may be even more sensitive to their pressure and comments. If the adolescent believes that her sibling views her appearance negatively, she may feel a sense of rivalry or conflict. This rivalry or conflict could come in the form of comparison, which may lead the adolescent to focus on the negative aspects of her sibling and thereby replace feelings of intimacy.

Second in the pattern of indirect effects, a lack of sibling intimacy was associated with higher levels of body dissatisfaction. Siblings are an important source of emotional support during adolescence. If adolescents feel as though they cannot go to their siblings to discuss intimate issues such as feelings about their bodies for fear of being teased or pressured, then they may internalize messages of thinness more than if they were able to openly discuss these issues with their siblings. Feelings of lack of closeness may inhibit a girl's ability to resist the urge to conform to the thin ideal and negative perceptions about their bodies and thereby lead to greater

feelings of body dissatisfaction. Thus, having a relationship with a sibling that is characterized by low feelings of intimacy may be a risk factor in the development of body dissatisfaction.

The indirect relationship shows a clear path from sibling teasing and pressure to intimacy, and then from intimacy to body dissatisfaction. To the authors knowledge, this is the first study to examine these relationships. The findings that sibling teasing and pressure were still strongly associated with body dissatisfaction, even after including sibling intimacy as a mediator, can be explained in different ways. First, teasing and pressure may exert such powerful influences on body dissatisfaction that it is very difficult to fully explain, or mediate, this relationship. This may be particularly true for adolescents due to the high volumes of teasing and pressure that occur during this time period (Keery, Boutelle, Van den Berg, and Thompson, 2005). Second, appearance-related teasing and pressure highlight body features, and make individuals more aware of these specific features. Evaluations of one's body is a particularly salient issue during adolescence, and drawing attention to specific areas of the body leaves the individual vulnerable to making comparisons (Bliss, 2000). These comparisons may then lead to increased dissatisfaction.

Limitations and Future Directions

A limitation of this study was that our sample was fairly small, and the majority of our participants identified as White and were living in a middle-class Midwestern city. Due to their characteristics, this sample is considered fairly low risk. Therefore, care must be taken when attempting to generalize these results beyond white, middle-class samples.

This study also had measurement limitations. For example, the measurement for teasing used only one item. This item cannot be used to test bi-directional effects of teasing, nor can it be used to examine actual versus perceived teasing by siblings. However, measuring perceived

teasing is important. Typically, the impact of teasing depends on how the person views the teasing (Georges, Harris, Milich, & Young, 1999). Even if there is minimal actual teasing, the individual could be perceiving this minimal teasing in a harmful way, thus contributing to negative development (Georges, Harris, Milich, & Young, 1999).

In addition to limitations with the measurement of teasing, there were limitations with the measurement of pressure. Pressure was measured by three, self-report items, and there was no way to assess the bi-directional relationship of pressure. It could be that the adolescent in the current study was first to exert pressures, such as modeling, that she felt from other mediums (e.g., the media) to her sibling. This, in turn, may have led her sibling to conform to these pressures. These pressures could then be reflected back to the adolescent; having a sibling exhibiting these pressures could influence the development of body dissatisfaction further. However, the measure used did not give the researcher the ability to capture this, and I was only able to assume that the sibling was the only one exhibiting pressuring behaviors. A fuller picture of pressure would further inform researchers.

A fuller picture of the sibling relationship would also be beneficial to researchers, specifically how the sibling perceived the level of intimacy in the relationship. As previously stated, teasing may be seen as an acceptable behavior in close relationships because individuals feel that they are close enough to that person to tease without fear of it being perceived as negative. If a sibling views the relationship as more intimate, that may be an underlying explanation as to why they are engaging in a higher frequency of teasing. However, if the adolescent who is being teased does not view the relationship as intimate, she may be perceiving that teasing as ill-intended. It would also be useful to additional information such as gender and

age on which sibling the participant was reporting on. The directions for this scale simply instruct the participants to “think of one of their siblings.”

Overall, it would be useful to have multiple measures of teasing, pressure, and intimacy. Such measurements could be self-report data, observational data, and reports by others in the participant’s life. This way, there would be a well-rounded view of all three constructs that could be aggregated to paint a more accurate picture of the teasing and pressure that participants face, as well as the intimacy in their sibling relationships. In addition, future work could look at the scaled differences between perceived and actual teasing and pressure, not unlike the way we use actual and ideal body image measurements. The lack of longitudinal data limits our scope, and does not allow us to examine a trajectory of teasing, pressure, and intimacy over time. Longitudinal data would be useful to help pinpoint crucial time points of the effects of teasing and pressure, and when intimacy in the sibling relationship is most influential.

Body image is not limited solely to girls. Adolescence is a time for body changes in both girls and boys, and boys also face pressures to achieve a desirable body shape and size. However, a desire for muscularity, instead of the desire for thinness, is typically the focus in male populations. Our study did not include boys, and research on the body image of boys is limited. Thus, future studies should examine body image in this population, and, in light of the findings of this study, how teasing and pressure may influence the development of body dissatisfaction among boys.

Strengths

Our study had several strengths. First, though the small size and homogeneity of our sample makes it difficult to generalize to other populations, we found significant indirect effects of intimacy on the relationship between teasing and pressure and body dissatisfaction. Past

studies have stated that finding significance in seemingly low-risk populations like ours may lead researchers to find even greater risks in seemingly high-risk populations (Blodgett Salafia, Gondoli, & Grundy, 2008).

Second, the authors used updated, strong analyses to find significance in the direct and indirect relationships. The Baron and Kenny (1986) mediation method uses a causal steps approach. This approach requires the researcher to estimate each of the paths (a, b, c) in the model and then determine whether a variable function as a mediator by seeing if certain statistical criteria, consisting of four different steps, are met. This approach is simple to learn and widely used; however, other researchers have stated that these reasons are not convincing enough to use a method that is not optimal when there are other options (Hayes, 2009). Thus, I used Hayes macro process for the analyses in this study, which does not rely on the causal steps approach. Instead, this method quantifies indirect effects, rather than infer they exist due to significance of certain paths, which means it is more likely than the causal steps approach to detect an effect of an intervening variable (Hayes, 2009). In addition, Hayes' (2012) mediation approach estimation is based on a bootstrapping approach, rather than the Sobel test which is typically used in supplement with the Baron and Kenny (1986) approach, which does not require data to be normally distributed (Hayes, 2009; Akanni & Oduaran, 2018).

To complement my use of updated analyses, I used valid and reliable measures including subscales of the SRQ and the EDI to assess sibling intimacy and girls' body dissatisfaction. In most past research using the SRQ, researchers have used the overall closeness scale, which consists of questions concerning intimacy, companionship, admiration, and affection between siblings. In the present study, I utilized the intimacy subscale of the SRQ which is typically not viewed as a separate score from the overall closeness scale. Using this scale, I was able to find

support for the relationship between sibling teasing and pressure, intimacy, and body dissatisfaction. Closeness can be understood as an aggregate of the multiple constructs previously mentioned, whereas intimacy is a single construct. Measuring only one construct, as opposed to multiple, can give the researcher a more direct answer as to what needs to be targeted for change.

While it is important to determine if teasing is occurring between individuals, how this teasing is perceived can add another dimension for analysis. The adolescent's perception of the motive of the sibling's teasing is an important determinant of the adolescent's outcomes (Haugh, 2016; Kowalski, 2004). A sibling may engage in teasing as a form of play or humor with no ill intent, however, the adolescent may not perceive the teasing with positive intent. If the adolescent perceives that her siblings is teasing her without ill-intent, she is less likely to experience negative outcomes (Gorman & Jordan, 2015). However, if the adolescent perceives the teasing as ill-intended, then she is more likely to experience negative outcomes, such as a decreased feeling of intimacy or body dissatisfaction (Kowalski, 2004).

Furthermore, our sample consisted of female adolescents, and literature supports that body image disturbances emerge mainly in late adolescence among girls. In addition, recent research has suggested that vulnerable individuals may already present higher levels of body image and eating concerns by early adolescence (Rohde, Stice, & Marti, 2015). Thus, this population is important to examine to help establish intervention and prevention programs to combat these issues and help reduce the large number of girls that go on to develop an eating disorder.

Implications

Primary goals of body image research include identification, elimination, and prevention of major influences that contribute to the development of a later eating disorder. Prevention through education can begin first at the family level. Bringing awareness to the different ways in which family members may be modeling unhealthy behaviors, communicating messages such as pressuring and teasing to be thin, and reinforcing behaviors and ideas relating to negative body image, may then encourage to family members to decrease such behaviors.

Early intervention with family members may help to decrease levels of current body dissatisfaction and ultimately prevent the development of clinical eating disorders. Our findings suggest that reducing the acceptability of appearance related teasing and negative appearance related comments within the family should be a target of intervention programs. In addition, programs could teach adolescents strategies to cope with teasing, as well as addressing teasing by family members by educating parents and siblings about the impacts of teasing on body dissatisfaction. Through such methods of intervention, levels of body dissatisfaction could be reduced.

Conclusion

In conclusion, studying appearance related teasing and pressure within the sibling relationship and how such behaviors influence body dissatisfaction is vital. The sibling relationship is largely neglected in body image research, especially specific relationship qualities (e.g., intimacy). My research brings into focus how siblings play a central role in the development of body dissatisfaction and, more specifically, how intimacy within the sibling relationship can influence the relationships between sibling teasing and pressure on body dissatisfaction.

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