

THE EFFECT OF PARENTAL WARMTH ON GIRLS' DRIVE FOR THINNESS: DO BOTH
PARENTS MATTER?

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The Effect of Parental Warmth on Girls' Drive for Thinness:
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ABSTRACT

Recent research has suggested that both maternal and paternal warmth may play a role in the development of drive for thinness in girls. This study used 115 adolescent girls' self-reports to examine the impact of the combined effect of parental warmth and pressure to be thin on adolescent girls' drive for thinness, dependent on whether or not parents had similar or differing levels of warmth. Using path analysis, results suggested that when parents had differing levels of warmth, the relationship between warmth and drive for thinness was fully mediated by pressure to be thin. However, when parents had similar levels of warmth, there was still a direct effect between parental warmth and girls' drive for thinness, indicating that partial mediation had occurred. These findings indicate that the combined effect of parents who are high in warmth may serve as a protective factor against poor body image in adolescent girls.

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DEDICATION

To my niece, nephews, and potential future children: May you lead happy, healthy lives.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS.....	iv
DEDICATION.....	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
INTRODUCTION.....	1
The Development of Poor Body Image and Disordered Eating	2
Parenting during Adolescence.....	5
Parental Messages Regarding Weight	6
Potential for Mediation.....	18
Potential for Moderation.....	19
Present Study.....	20
METHOD.....	22
Participants.....	22
Procedure.....	22
Measures.....	23
Analysis Plan.....	24
RESULTS.....	28
Variable Descriptions.....	28
Group Comparisons.....	30
DISCUSSION.....	35
Parental Warmth and Parental Pressure to be Thin.....	35

Parental Warmth and Girls' Drive for Thinness.....	37
A Mediating Effect? Parental Pressure to be Thin versus Parental Warmth.....	41
Strengths and Limitations.....	43
Implications.....	46
Conclusion.....	48
REFERENCES.....	49
APPENDIX A. MODEL OF THE SAME WARMTH GROUP INCLUDING UNSTANDARDIZED BETA VALUES.....	62
APPENDIX B. MODEL OF THE DIFFERENT WARMTH GROUP INCLUDING UNSTANDARDIZED BETA VALUES.....	63

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Means, Standard Deviations, and T-Tests by Same or Different Level of Warmth for the Major Study Variables.....	28
2. Correlations of Study Variables with All Participants Included.....	29
3. Correlations of Study Variables with Participants with Same Warmth Parents.....	29
4. Correlations of Study Variables with Participants with Different Warmth Parents.....	29

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Theoretical model.....	19
2. Mediation model that was tested.....	27
3. Model of the same warmth group with standardized Beta values.....	32
4. Model of the different warmth group with standardized Beta values.....	32

INTRODUCTION

Body image can be defined as “a person’s perceptions, feelings and thoughts about his or her body” (Grogan, 2004, p. 524). A negative body image, otherwise called body dissatisfaction, can lead to disordered eating habits, such as restriction of food intake, in an attempt to improve one’s physique (e.g. Liechty & Lee, 2013). Because these habits can result in severe health consequences (e.g. Treasure, Claudino, & Zucker, 2010), it is important to determine what can be done to encourage a healthy self-image in adolescents. Though body image concerns exist for both male and female adolescents, this study focused on girls specifically, as it has been suggested that the characteristics of girls’ and boys’ body dissatisfaction differ, with females focusing most often on thinness, and males on increased muscularity (e.g., Anderson & Bulik, 2004). Relatedly, pressure to be thin is more strongly associated with body dissatisfaction for girls than it is for boys (e.g. Chaiton et al., 2009).

While there are many factors impacting girls' body image, this paper focuses on the role of parents. Because parents are a constant source of influence in their daughters' lives from birth through adolescence, they are uniquely positioned to help daughters develop a positive self-image. Parents can influence girls' body image directly through weight-related comments, as well as indirectly through their general parenting styles (Rodgers & Chabrol, 2009). Previous research has suggested that direct messages may more strongly influence girls' body image (Rodgers & Chabrol, 2009), but this research has examined mothers and fathers as unique predictors, not as a combined unit that simultaneously affects girls, nor has it adequately accounted for the potential impact of indirect messages on direct messages. Therefore, the present study sought to examine both direct and indirect combined parental influences in order to better understand the complex processes through which parents impact girls' body image.

The following sections will further examine the development of body dissatisfaction from childhood through adolescence, focusing when possible on a particular aspect of body dissatisfaction, drive for thinness. Drive for thinness was chosen as the focus of this study because female adolescents often perceive becoming thinner as a way to better match societal standards of beauty and therefore alleviate feelings of body dissatisfaction (e.g., Sands, 2000). Parental influences on body image will then be examined, with an emphasis first on an indirect influence, parental warmth, and then on a direct influence, parental pressure to be thin. Previous research on both mothers and fathers was included when possible. The potential relationship among all three variables, parental warmth, parental pressure to be thin, and girls' drive for thinness, will then be explored.

The Development of Poor Body Image and Disordered Eating

By ages four to six, girls already believe that it is not acceptable to be fat (Musher-Eizenman, Holub, Edwards-Leeper, Persson, & Goldstein, 2003). Furthermore, by the time girls are in their first year of school at approximately age six, 46.7% already indicate that they want to be thinner, and almost half of girls ages five to eight indicate that they would diet if they started gaining weight (Dohnt & Tiggemann, 2006). Such early development of body dissatisfaction and the internalization of the thin ideal have been shown to lead to more disordered eating attitudes even in 7 to 11 year old girls (Evans, Tovee, Boothroyd, & Drewett, 2013).

Furthermore, body dissatisfaction has been shown to increase throughout adolescence (e.g., Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013; Calzo et al., 2012). This is particularly worrisome, as in adolescence, the most significant source of girls' self-esteem is their appearance (Shapka & Keating, 2005). For instance, over a ten year period during which girls transitioned through middle school, high school, and into young adulthood, body

satisfaction decreased 5 to 10% (Bucchianeri et al., 2013). Similarly, when asked, “In the past year, how happy have you been with the way you look?” 14.7% of 9 to 10 year old girls indicated that they were only a little happy or not at all happy; by the time they were 17 to 18 years old, 35.4% of girls were barely or not at all happy with the way that they looked (Calzo et al., 2012).

While the previous studies examined body dissatisfaction in general, and therefore might focus on features beyond weight such as hair, eyes, etc., when asked questions specifically regarding weight and drive for thinness, the data become even more concerning. In a study of 144 girls aged 14 to 17 years, 73% indicated that they wanted to be thinner (Schneider et al., 2013). Furthermore, when asked to look at nine different female contour drawings and choose the one that best represented their current body type as well as which one best represented their ideal body type, 70.2% of adolescent girls chose a body type for their ideal that was thinner than their current body (Lawler & Nixon, 2011).

The percentage of girls who are unhappy with their bodies also changes when the weights of the adolescents are taken into consideration. For example, of 12 to 17 year old girls categorized as overweight but who had an average amount of fat, 88.7% wanted to have a thinner body, and for those girls who were overweight and overfat, 93.6% desired a thinner body (Bibiloni, Pich, Pons, & Tur, 2013). While it may indeed be better for those girls’ future health to be thinner and therefore of average weight and fat, if the focus is solely to be thin, not just healthy, they become more likely to use maladaptive dieting habits (Liechty & Lee, 2013). However, even for girls who were underweight or of average weight and with an average amount of fat, almost 50% still indicated wanting a thinner body (Bibiloni et al., 2013). Such high rates

of drive for thinness even in underweight and average weight girls reflect a troubling trend towards an internalization of the thin ideal that outweighs the importance of health.

A prioritization of thinness over health frequently leads to unhealthy dieting in adolescents, and dieting is in turn associated with depression, binge eating, and extreme weight loss behaviors such as laxative use (Liechty & Lee, 2013). Furthermore, negative evaluations of the body alone are directly associated with increases in emotional eating, bulimic symptoms, low-self-esteem, depression, and restrictive eating tendencies (Johnson & Wardle, 2005). These disordered eating habits, as well as the clinically diagnosable eating disorders that may develop from those habits, can then lead to poor health consequences, such as electrolyte imbalances, osteoporosis, dental problems, and cardiac arrhythmias (Treasurer et al., 2010). Consequently, individuals suffering from clinically diagnosable eating disorders have been shown to be at increased risk of death (Arcelus, Mitchell, Wales, & Nielsen, 2011).

Thus, the high rates of body dissatisfaction and drive for thinness found in underweight, average weight, and overweight adolescent females should be taken seriously due to the increased risk for the development of progressively dangerous consequences. Because risk factors for body dissatisfaction start as early as age four (e.g., Dohnt & Tiggemann, 2006), it is important to identify potential protective factors against adolescent body dissatisfaction that are also prevalent during childhood. Consequently, while peers become a significant source of influence in addition to parents during adolescence, because parents are highly influential during childhood when risk factors begin to develop (Furman & Buhrmester, 1992), parents are a primary target for prevention. Therefore, this study sought to address what parental influences may serve as protective factors against poor body image and disordered eating outcomes during adolescence.

Parenting during Adolescence

All parent-adolescent relationships include components unique to each individual family system, but more broadly speaking, research has identified several components of parenting that consistently lead to the development of healthier adolescents. For instance, while parents need to continue to guide adolescents' actions and encourage healthy behaviors through setting realistic boundaries, they also have to balance their child's need for increased autonomy. This does lead to increases in conflict between parents and children, but affection does not lessen (Arnett, 1999). Instead, this conflict can be seen as the result of normative increases in autonomy seeking that take place at this time, as adolescents begin to develop the skills to handle life on their own as adults (Arnett, 1999). How parents handle that conflict and continue to encourage children's individuation while setting boundaries sets the tone for the parent-child relationship during adolescence.

While parents may find frequent bickering with their adolescents more disheartening than the adolescents themselves do, if they continue to be firm during arguments and set rules and limitations, while remaining warm and responsive to their adolescent's thoughts, ideas, and feelings, parents can encourage healthy development in their children (Baumrind, Larzelere, & Owens, 2010; Steinberg, 2001). Without that warmth, however, such discipline can lead to maladjustment (Baumrind et al., 2010). The children of warm and firm parents, otherwise called authoritative parents, are more likely to succeed socially, academically, and interpersonally (Steinberg, 2001). Indeed, parents who consistently displayed authoritative parenting characteristics throughout their children's lives had adolescents who were more competent, self-sufficient, and experienced less internalizing and externalizing problems (Baumrind et al., 2010). In addition, lack of warmth has been associated with child maltreatment intergenerationally, such

that children who are abused sexually, emotionally, and physically are more likely to grow up to parent their own children with less warmth and more aggression, as well as be rejecting or neglectful (Newcomb & Locke, 2001).

Parental Messages Regarding Weight

While parenting has many broad impacts on adolescent development, more specifically, parenting styles and the messages that parents convey have been shown to have a significant impact on girls' body image. As their adolescent is growing and physically maturing, parents may begin to have concerns over their daughter's weight and body image, and therefore attempt to set boundaries regarding what are or are not appropriate eating habits and thought processes. However, some parents may unintentionally encourage habits or send messages that lead to increases in maladaptive weight loss strategies, such as restriction, used by adolescents.

Indeed, there are established links between parental messages about body image and eating and the development of body dissatisfaction, a frequent component of which is drive for thinness, and disordered eating in girls (Rodgers & Chabrol, 2009). Parents can send messages to their children in a variety of ways. For instance, parents can send indirect messages about thinness to their children by engaging in dieting behaviors themselves (e.g., Rodgers, Faure, & Chabrol, 2009). In addition, certain parenting styles in general may indirectly increase girls' risk for developing body dissatisfaction. For example, parents who are not emotionally available are more likely to have daughters who struggle with eating healthily and in moderation (Topham et al., 2011). Parents may also directly send messages to their children about thinness in general, as well as about the child's own weight, by making weight- and eating-related comments (Keery, Boutelle, van den Berg, & Thompson, 2005).

Indirect messages. Not all of the messages sent to adolescents are sent directly or intentionally; girls are aware of parental actions and comments made to themselves or to others. Adolescents may then internalize the messages that parents are sending nonverbally. In terms of dieting, this means that dieting behaviors as well as beliefs about body image and the importance of being thin may be inadvertently communicated to adolescents by parents. For instance, both high thin ideal internalization and high body dissatisfaction of mothers have been associated with adolescent thin ideal internalization (Linville, Stice, Gau, & O'Neil, 2011). Furthermore, Linville et al. (2011) found that mothers who had higher levels of thin ideal internalization had daughters whose bulimic symptoms increased throughout a four year period in adolescence. This indicates that the modeling of negative beliefs can lead to an increase in disordered eating habits in adolescents over time.

Parental modeling of dieting and body image beliefs also influences girls' drive for thinness, body dissatisfaction, and bulimic symptoms (Abraczinskas, Fisak, & Barnes, 2012). For instance, maternal modeling of dieting behaviors significantly predicted adolescent girls' drive for thinness (Rodgers et al., 2009), as well as girls' unhealthy weight control behaviors such as fasting and taking diet pills (Keery, Eisenberg, Boutelle, Neumark-Sztainer, & Story, 2006). Therefore, it is important for parents to monitor their own behavior around adolescent girls, as negative indirect message about body image and eating may harm girls' body image and lead to disordered eating habits.

Parental warmth. Indirect parental effects on body image and disordered eating can also develop from parenting styles. The main focus of the present study is how parental warmth, defined as care and empathy in the parent-child relationship (Blodgett Salafia, Schaefer, & Haugen, 2014), affects girls' body image and potential for disordered eating habits. In general,

parental rejection, which includes lack of parental warmth, has been associated with internalizing problems (Yahav, 2007). For instance, one study found that, when compared to both non-sibling and sibling controls (e.g., those who did not have internalizing and externalizing symptoms), adolescents with internalizing problems scored higher on measures of parental rejection and therefore lack of warmth (Yahav, 2007).

Importantly, there is evidence to suggest that parental warmth more strongly affects those with eating disorders in particular in comparison to those suffering from other disorders. For instance, when compared to a group of patients with depression or anxiety as well as a group of university students who did not identify as suffering from any mental health disorder, those who were being treated for anorexia nervosa perceived their parents to be significantly less caring (Deas, Power, Collin, Yellowlees, Grierson, 2011). Similarly, Mangweth et al. (2005) found that individuals being treated for anorexia nervosa or bulimia nervosa were more likely to describe their relationship with their parents during childhood as lacking in intimacy when compared to those with substance dependence and a control group. These studies indicate that warmth plays a specific role in the development of eating disorders, above and beyond the development of mental health problems in general.

While there is other research supporting the link between clinically diagnosed eating disorders and low parental warmth (e.g., Lobera, Rios, & Casals, 2011; Swanson et al., 2010), there is also a large amount of research that specifically examines the connections between parental warmth (or closely related measures) and poor body image and disordered eating. For instance, increases in disordered eating in over 5,000 adolescent girls was associated with low levels of parental caring (Neumark-Sztainer, Story, Hannan, Beuhring, & Resnick, 2000), which is often referred to as warmth. Interestingly, authoritarian and permissive parenting, which are

respectively associated with lack of warmth or too much warmth in the absence of any control, have also been associated with the development of disordered eating symptoms and poor body image, particularly drive for thinness among adolescents whose mothers are using those maladaptive parenting strategies (Haycraft & Blisset, 2010).

These quantitative findings are further supported by a qualitative study of college age women. Women who expressed concern over their own eating habits commonly discussed having a history of poor relationships with parents, often described as an inability to convey their emotions to parents (Budd, 2007). This is interesting, as it implies that the lack of warmth from parents creates a bidirectional effect; not only are parents not reaffirming of daughters' emotions, daughters in turn express less to parents. This could potentially lead to a cycle of poor parent-child interactions that continues throughout adolescence, preventing adolescents from discussing difficulties with parents and instead turning to maladaptive coping strategies. Indeed, Topham et al. (2011) found that children in families that were emotionally responsive, a key component of warmth, were less likely to experience emotional eating in response to negative affect.

It is possible that these family patterns regarding warmth extend beyond the nuclear family. One study suggested that even beyond the noted association between less parental care and anorexic symptoms, there was also an association with more disordered symptoms in the patient and an uncaring relationship between the parents and the maternal or paternal grandmother of the patient (Canetti, Kanyas, Lerer, Latzer, & Bachar, 2008). While this was true for a measure of disordered eating overall, high drive for thinness was also related to having a mother/grandmother relationship characterized by low warmth. This suggests that a history of low warmth in the family provides an environment in which drive for thinness may thrive. Similarly, it was an intergenerational pattern of low warmth, not high control, that was

specifically related to patients' symptoms, indicating that low parental warmth in particular may be a particularly important target for intervention.

The importance of maternal vs. paternal warmth. Whether or not there are differences between maternal and paternal warmth and their effects on girls' body image is unclear. One study examining the relationship between disordered eating and co-occurring psychiatric symptoms found that, when compared to college students with no eating disorder symptoms, those with symptoms indicated experiencing less maternal and paternal affection (Tseng, Gau, Tseng, Hwu, & Lee, 2014). However, lower paternal care was associated with more severe disordered eating symptoms, though low levels of care from both parents were associated with other co-occurring psychiatric symptoms (Tseng et al., 2014). This would imply that paternal warmth is more vital to the development of disordered eating in girls than maternal warmth. Relatedly, Pace, Cacioppo, and Schimmenti (2012) discovered that when paternal care was high, binge eating symptoms were lower even when female adolescents reported a preoccupied attachment with their fathers. However, the researchers did not examine maternal care (Pace et al., 2012).

In contrast, another study indicated that low care from mothers predicted binge eating in a sample of over 600 average weight adolescent females, but not low care from fathers (Wertheim et al., 1992). Similarly, in a study of twins, maternal care emerged as influential in the development of body shape concerns at age 13, but not paternal care (Wade et al., 2013). These studies indicate the importance of maternal warmth over paternal warmth on girls' body image and drive for thinness. It is possible that these differences are due at least partially to the period of life in which the parent-child relationship was measured. For instance, a recent analysis completed by Jones and Blodgett Salafia (2015) suggested that while both early mother-child

and father-child relationships were related to emerging adults' attitudes towards their bodies, the early mother-child relationship was stronger. However, when the current parent-child relationships were examined, only the father-child relationship continued to significantly impact women's body satisfaction (Jones & Blodgett Salafia, 2015). Therefore, because some of the above mentioned studies examined adolescents (e.g., Wade et al., 2013; Wertheim et al., 1992) versus emerging adults (Tseng et al., 2014), it is possible that these differences could be explained by the developmental time period participants are in.

However, while there may be somewhat conflicting patterns regarding the significance of one parent over another depending on the outcome or population studied, research generally supports the idea that both parents are important. Therefore, the present study includes mothers and fathers. Additionally, instead of trying to determine which parent is more important, we will examine the combined effect of both parents' warmth.

Studying the total effect of both parents is arguably of more significance than determining which parent is the most influential, because while mothers and fathers may be more influential depending on the disordered symptom studied (e.g., binge eating versus severe restriction), they are both important in the development of risk factors, such as drive for thinness, which lead to the aforementioned disordered behaviors (e.g., Abraczinskas et al, 2012; Rodgers et al., 2009). Therefore, by focusing on how both parents can provide barriers to those risk factors, researchers can help prevent the development of multiple types of disordered eating. In addition, by separating the effects of mothers and fathers, researchers must make the assumption that each parent has a completely unique influence on their daughters, but in real-world situations, girls in two-parent households will be simultaneously experiencing the parenting styles of both parents. The present study sought to determine if the differences in findings related

to the importance of maternal versus paternal warmth could be due to discrepancies in levels of warmth between parent pairs themselves, meaning, does parental warmth affect girls' drive for thinness differently if both parents have the same levels of warmth as one another, or different levels?

Direct messages. Despite the abundance of research on the effects of parenting styles, a review of the influence of parents on body image and eating problems found that direct messages from parents had a stronger effect on girls than indirect effects (Rodgers & Chabrol, 2009). Direct messages describe the beliefs and information that parents tell their adolescents regarding eating, body image, and exercise. Such messages may be healthy or unhealthy. For example, whether or not it is intended to be playful or cruel, maternal and paternal teasing about adolescent girls' weight has been shown to be related to girls' body dissatisfaction, internalization of the thin ideal, restriction, and bulimic behaviors (Keery et al., 2005; Schaefer & Blodgett Salafia, 2014).

Research has also shown that, in addition to teasing, many parents make negative comments directly to their daughters regarding weight. For example, in one study, negative comments from mothers about adolescent girls' weight significantly predicted girls' body dissatisfaction, drive for thinness, and bulimic symptoms (as did negative paternal comments), while positive comments from fathers actually served as a protective factor against girls' body dissatisfaction (Rodgers et al., 2009). Abraczinskas et al. (2012) also found that negative comments relating to girls' weight and appearance as well as encouragement from parents to lose weight was related to girls' drive for thinness and bulimic symptoms. This encouragement from parents to lose weight could be construed to be parental pressure to be thin.

Pressure to be thin. Research suggests that when mothers encourage their daughters to diet, girls become more concerned with controlling their weight (Fulkerson et al., 2002). Such dieting can lead to other unhealthy habits, particularly when the focus is on weight, not overall health (Liechty & Lee, 2013). Indeed, pressure from families to maintain a thin ideal was shown to predict bulimic symptoms in both college age women and adolescents (Linville et al., 2011; Young, Clopton, & Bleckley, 2004). Pressure to be thin also appears to mediate the relationship between adiposity (as measured by BMI and skinfold thickness) and depression, indicating that it is not weight itself that leads to depression, but instead the negative comments and encouragement to lose weight that adolescents experience from mothers and fathers (in addition to siblings and peers) as a result of their weight (Chaiton et al., 2009). This relationship was present despite the fact that adolescents in this sample were in general of average BMI ($M = 21.4$, $SD = 4.2$) (Chaiton et al., 2009).

Encouragement from family and friends to lose weight also predicted adolescent girls' undesirable eating attitudes and behaviors, as well as the discrepancy between their current and ideal figures (Ata, Ludden, & Lally, 2007). Interestingly, Logel et al., (2014) found that when participants expressed concern over weight gain to parents and others, those who received a lot of acceptance messages, essentially the opposite of pressure to be thin messages, were more likely to maintain or lose weight, versus those who did not receive many of these messages and subsequently continued to experience weight gain. These studies show the effect that messages regarding thinness from parents can have on adolescent girls' body image and eating habits, and thereby underscore the need for a better understanding of the factors that discourage parents from pressuring daughters to be thin.

Connections between parental warmth and parental pressure to be thin. Parental warmth may be one factor that deters unhealthy pressuring behaviors. Baumrind's (1971) theory on parenting styles provides support for a suggested link between parental warmth and parental pressure to be thin. According to this theory, those who parent using an authoritative style are warm, responsive, and caring with their children, while establishing realistic boundaries to guide their children's behaviors; this is the style most conducive to healthy parenting and adjustment during adolescence. Those who are authoritarian parents are low in warmth and responsiveness, and instead use strict, controlling behaviors with children. Permissive parents, while high in warmth, do not set boundaries and are overly lenient with children's behavior.

Parents who are high in warmth, whether they are authoritative or permissive, would be considerably less likely to use pressure during interactions with their children. Authoritative parents would likely use adaptive techniques such as encouragement to be healthy, whereas permissive parents would be more likely not to attempt to regulate their children's eating or exercise habits at all. Alternatively, authoritarian parents low in warmth would be more likely to use maladaptive techniques such as pressure to be thin in an attempt to control their children's weight. In addition, those parents who are neglectful and therefore low in both warmth and pressure may still inadvertently increase girls' perceived pressure. This means that girls may internalize societal pressures to be thin and engage in behaviors to become thinner in order to gain the approval of dismissive parents. Therefore, higher warmth should theoretically be linked to less pressure, while low warmth should be linked to increased pressure.

In the field of body image and eating disorder research, there have indeed been hypotheses regarding why parents would be more likely to pressure their adolescents, including assumptions made about the characteristics of parent-child interactions. However, and despite

the fact that measures such as parental warmth and parental pressure are often examined in studies together as potential predictors of girls' maladaptive body image beliefs or eating habits, parental warmth does not appear to have been validated as a predictor of parental pressure to be thin. Therefore, this study also investigated the theoretically suggested link between parental warmth and parental pressure.

Connections between parental pressure to be thin and girls' drive for thinness. Both theory and empirical research support a specific pathway from parental pressure to be thin and girls' desire to be thinner. Baumrind's (1971) theory on parenting styles is one example that supports this relationship. Parents who are overly controlling (i.e., authoritarian parents) would be more likely to use pressure as a strategy versus healthier behaviors such as encouragement that would be more likely used by authoritative parents (Baumrind, 1971). The children of authoritarian parents would therefore be expected to have more maladaptive outcomes such as internalizing symptoms than those who experienced a healthy parenting style.

Baumrind's (1971) initial research has been more recently supported by a study conducted by her and colleagues (2010), which followed preschoolers into early adolescence. In this study, they found that when adolescents had grown up in an authoritarian household, they had significantly more maladjustment, including feelings of worthlessness and insecurity (Baumrind et al., 2010). There are additional empirical studies specifically supporting the link between increases in pressure and girls' maladaptive adjustment. For instance, higher pressure to be thin from family as well as friends, dating partners, and the media has been found to correlate with higher thin-ideal internalization, which has then been shown to contribute to increases in dieting over time (Stice, Mazotti, Krebs, & Martin, 1998).

Some studies have focused solely on the role of maternal pressure to be thin, excluding the potential role of fathers. For example, Benedikt, Wertheim, and Love (1998) examined the effects of maternal beliefs about their own bodies and eating habits as well as how those habits and beliefs were transferred to their daughters. The authors found that maternal pressure to lose weight predicted increases in the discrepancies between adolescent girls' current and ideal figures, such that more maternal pressure was associated with girls desiring significantly thinner bodies than their current body types (Benedikt et al., 1998). Maternal pressure to be thin has also been shown to correlate with adolescent girls' internalization of the thin ideal, though this effect disappeared with the inclusion of other parental and peer factors (Linville et al., 2011).

While the afore-mentioned studies were more correlational in nature and could not assess causality, one study attempted to change maternal understanding of what the thin ideal is as well as how to send healthy messages about weight and eating to daughters, and then examined how adolescent beliefs about thinness changed as a result (Corning, Gondoli, Bucchianeri, & Blodgett Salafia, 2010). Mothers who took place in an intervention that was intended to change beliefs about food and body image were perceived by their daughters to put less pressure on them to be thin in comparison to mothers in the control group. The girls whose mothers attended this program then had decreased drive for thinness three months after the intervention was completed, suggesting that, by decreasing maternal pressure to be thin, it is possible to then decrease girls' drive for thinness (Corning et al., 2010).

Other studies have examined both maternal and paternal pressure to be thin or lose weight in relation to girls' drive for thinness. For instance, even when BMI was controlled for, both maternal and paternal pressure to be thin was correlated with girls' drive for thinness (Rodgers et al., 2009). However, maternal pressure emerged as a significant factor above and

beyond paternal pressure in predicting girls' drive for thinness, meaning that mothers appeared to have a greater effect on girls than fathers (Rodgers et al., 2009).

The discrepancy between the effects of maternal and paternal pressure on girls' desire to be thinner has been found in other studies as well. For example, Coomber and King (2008) found that the relationship between maternal pressure to be thin and girls' body image dissatisfaction was fully mediated by girls' internalization of the thin ideal, whereas the relationship with paternal pressure was only partially mediated by internalization of the thin ideal. Similarly, though encouragement from both parents to lose weight was associated with higher drive for thinness among adolescent girls, the effect was substantially larger for maternal encouragement (Wertheim, Martin, Prior, Sanson, & Smart, 2002). These findings suggest that, while maternal and paternal pressure to be thin both play an active role in the development of a preoccupation with thinness in adolescent girls, maternal pressure to be thin may be of particular importance due to its strong effect on girls' drive for thinness even above and beyond paternal pressure.

However, any potential barrier against poor body image should be considered, and therefore paternal pressure should be included as it is still significant in a majority of studies. In addition, although there are studies supporting the separate roles of both maternal and paternal pressure, there appear to be none that look at the combined effects of parents. This means that, even when studies include measures of pressure for both parents, they examine them as two distinctly separate constructs. Therefore, this study included both maternal and paternal pressure, and more specifically, will examine the combined effects of both parents by averaging the two measures and creating one aggregate measure of parental pressure to be thin.

Potential for Mediation

Some researchers have proposed that direct effects on girls' body image and eating habits more strongly impact development than parental indirect effects (e.g. Rodgers & Chabrol, 2009). This means that overt messages regarding weight loss and thinness from parents would be of more importance for girls' body image development than the more indirect effects of parenting habits, as girls would be more susceptible to directly internalizing and applying such messages to their own bodies. However, due to the theoretically proposed impact of parental warmth on parental pressure to be thin, it is possible that parenting habits such as warmth continue to impact girls' body image and eating habits, but do so indirectly through direct messages such as pressure to be thin. Parents who are high in warmth would theoretically pressure their daughters less (path a in Figure 1), which would in turn lead to lower drive for thinness (path b in Figure 1). Similarly, parents low in warmth would be more likely to use pressure as a strategy, which would lead to increased body dissatisfaction and desire to be thin in girls. Therefore, while the link between direct messages and girls' body image could appear to be more powerful than the relationship between indirect effects and girls' body image, the relationship between indirect effects and body image may remain strong but only through the increase or decrease of the direct effect. In this study, this would mean that parental warmth is still strongly related to girls' drive for thinness, not directly, but by increasing or decreasing parental pressure. Therefore, in order to fully understand the roles that parents play in the development of girls' drive for thinness, this mediated pathway must be examined.

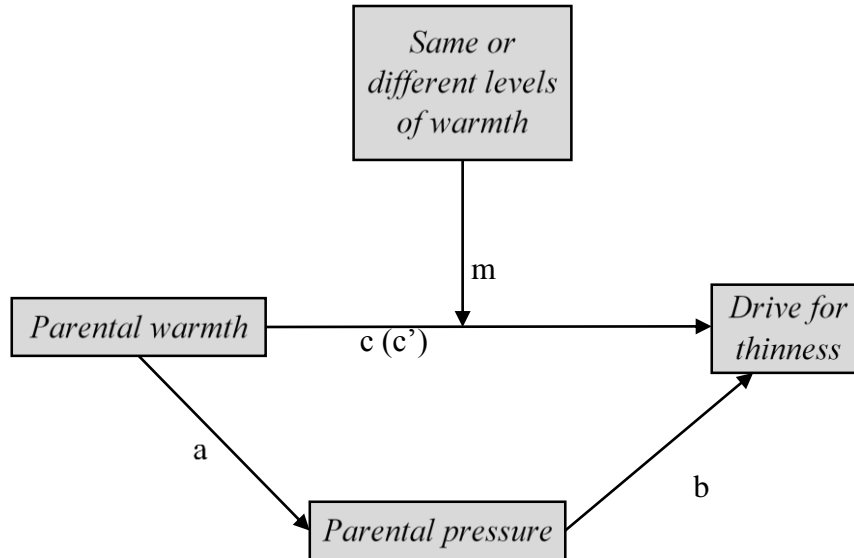


Figure 1. Theoretical model.

Potential for Moderation

Though there is empirical support for the effect of warmth on girls' body image and eating habits, previous research has examined the effects of mothers and fathers separately, without taking into consideration the combined effects of both parents. Adolescents' body image and eating habits develop because of the combined impact of a multitude of factors, and therefore there is a need to examine those factors, such as parents, as a whole. Relatedly, because the research has not yet been completed, there is no understanding of the potential moderating effect of this combined parental effect. While it is suggested that 75% of parents have similar parenting styles to their coparent (Steinberg, 2001), a substantial minority of parents of adolescents may differ in levels of warmth, indicating that by ignoring parents as a unit, past research may have bypassed a significant proportion of families.

Though Steinberg (2001) suggests that researchers have overestimated the importance of parents being "on the same page" in terms of parenting style, it could be argued that this is not the case for the development of body image and disordered eating. There are numerous studies

that show the importance of both maternal and paternal direct and indirect effects on girls' drive for thinness (e.g., Abraczinskas et al, 2012; Canetti et al., 2008; Rodgers & Chabrol, 2009; Rodgers et al., 2009). Consequently, inconsistent parenting styles and messages between mothers and fathers may have a very different effect on the development of body image and eating problems in comparison to consistent messages, whether those messages are consistently good or bad. In general, parents who are more likely to avoid dealing with children's negative emotions by using punitive measures and are therefore low in warmth, as well as parents who use harsh and inconsistent discipline, have had children with increased internalizing and externalizing behaviors (e.g., Edens, Skopp, & Cahill, 2008; Mirabile, 2014; Surjadi, Lorenz, Conger, & Wickrama, 2013). More specifically, research suggests that parents who are inconsistent with messages regarding their daughters' eating habits (i.e., sometimes encouraging behaviors versus punishing them at other times) had daughters who struggled more with relapsing (Prescott & Le Poire, 2002). Thus, examining the potential moderating effect of parents who have consistent or differing levels of warmth (path m in Figure 1) may better illuminate how warmth differentially affects adolescent girls' drive for thinness. Therefore, the overall study examined a moderated mediation model.

Present Study

The link between parental warmth and the development of body dissatisfaction and disordered eating has been firmly established, such that more warmth is associated with less symptomology (see path c in Figure 1). Similarly, decreases in parental pressure to be thin have been shown to decrease girls' drive for thinness (see path b in Figure 1). However, while there is a theoretical link between parental warmth and parental pressure to be thin, that relationship, to the author's knowledge, has yet to be empirically validated. Therefore, the models examined in

this study evaluated the direct link between parental warmth and parental pressure to be thin, specifically. Hypothesis 1 then states: As parental warmth increases, parental pressure to be thin will decrease (see path a in Figure 1).

Past research has established both maternal and paternal warmth as separate predictors of girls' disordered habits, but body dissatisfaction variables such as drive for thinness that may precede the development of disordered eating have not been examined as outcomes. Therefore, Research Question 1 asked: is there a relationship between parental warmth and girls' drive for thinness (see path c in Figure 1)? Because both parents do affect the development of body dissatisfaction and disordered eating, it is possible that those parents with the same levels of warmth will more strongly impact their daughter's drive for thinness than those who have different levels of warmth. This means that parents who both have high levels of warmth would have daughters with a low drive for thinness, while those who both have low levels of warmth would have daughters with a higher drive for thinness.

Furthermore, the relationship between both parents' combined levels of warmth on girls' disordered habits has yet to be examined. As a result, Research Question 2 was: does the impact of parental warmth on girls' drive for thinness differ depending on whether or not parents have the same or differing levels of warmth (see path m in Figure 1)? Finally, previous studies have found that direct parental impacts on girls' body image and eating have stronger effects than indirect parental influences, but studies have not considered the combined strength of both parents. Thus, Research Question 3 asked: do the combined effects of maternal and paternal warmth continue to impact girls' drive for thinness, even when parental pressure to be thin is included as a mediator of the relationship (see path c' in Figure 1)?

METHOD

Participants

Participants were originally 134 girls in grades 7-12 in two Midwestern schools. However, 19 girls were removed from the analyses as they did not report information for both mothers and fathers. The remaining 115 girls ranged in age from 12 to 19 ($M = 14.85$, $SD = 1.63$). The majority of participants were in middle school (62.6%; $n = 72$), with the remaining participants in high school (37.4%; $n = 43$). The vast majority of participants were White (93.9%; $n = 108$), with five participants (4.3%) identifying as Native American. The other three participants indicated they were either Hispanic or a different ethnicity not listed. Based on self-report, participants weighed an average of 125.1 ($SD = 25.92$) pounds, were an average of 64.2 inches ($SD = 2.64$) tall, and were of average BMI ($M = 21.32$, $SD = 4.32$). According to BMI weight status categories, 26.1% ($n = 30$) of girls were underweight, 57.4% ($n = 66$) were of average weight, 12.2% ($n = 14$) were overweight, and 4.3% ($n = 5$) were obese.

Procedure

Participants were recruited using flyers and parental consent forms distributed to students at both a Midwestern middle school and high school over a one year period. Students who returned parental consent forms were asked to complete assent forms and a packet of surveys. If participants were 18 or older, they completed their own consent forms. Participants who were in middle school completed the packets together in a large auditorium after school, while participants who were in high school filled out their packets in a classroom setting before school. It generally took one to two hours for participants to complete all forms. All adolescents received a \$25 giftcard to a local mall for their participation.

Measures

Parental warmth. Parental warmth was measured using the 12-item Care subscale of the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). This subscale includes items such as “My mother seemed emotionally cold to me” and “My father spoke to me in a warm and friendly voice.” Participants were asked to rank how much that was or was not like their parent on a 4-point scale ranging from 0 (*Very Unlike*) to 3 (*Very Like*). Items were scored such that higher scores indicated a higher level of parental warmth. This scale has also been shown to have good construct validity, as is demonstrated by significant correlations in three different samples with the parental rejection subscale of the Egna Minnen Beträffande Uppfostran (EMBU; Perris, Jacobsson, Linndström, von Knorring & Perris, 1980) (r 's ranging from -.55 to -.76), as well as with the emotional warmth subscale (r 's ranging from .88 to .96) (Arrindell, Gerlsma, Vandereycken, Hageman, & Daeseleire, 1998). These scales have been found to have good internal reliability when used with adolescents (McKinney & Renk, 2008; alphas ranging from .79 to .89). In this study, the scale had a Cronbach's alpha of .90 for mothers, and for fathers, the scale had an alpha of .89.

Parental pressure to be thin. Parental pressure to be thin was measured using an adapted version of the Perceived Sociocultural Pressure Scale (Stice, Ziemba, Margolis, & Flick, 1996). Six questions, three per parent, focus specifically on parental influences, including items such as “My mother teases me about my weight or body shape” and “I've noticed a strong message from my father to have a thin body.” Participants were asked to respond on a 5-point scale ranging from 0 (*none*) to 4 (*a lot*), with higher scores indicating higher levels of pressure to be thin. This scale has also been shown to have good predictive validity (Stice & Agras, 1998; Stice & Bearman, 2001). The original scale has been shown to have high internal reliability

when used with adolescent females ($\alpha = .80$) (Stice, Spangler, & Agras, 2001). In the present study, Cronbach's alpha was .91 for the overall scale, .84 for the maternal pressure subscale, and .79 for the paternal pressure subscale.

Drive for thinness. Girls' drive for thinness (DFT) was measured using the Drive for Thinness Subscale from the Eating Disorder Inventory (EDI), developed by Garner, Olmstead, and Polivy (1983). This is a 7-item scale consisting of items such as "I am preoccupied with the desire to be thinner" and "If I gain a pound, I worry that I will keep gaining." Responses are on a 6-point scale ranging from 0 (*Never*) to 5 (*Always*), with higher scores indicating a higher drive for thinness. This scale has been shown to have good validity, loading highly on a dietary restraint factor along with the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) dieting factor and the Three Factor Eating Questionnaire (TFEQ; Stunkard & Messick, 1985) cognitive restraint scale (Williamson, Barker, Bertman, & Gleaves, 1995). In a study of adolescent girls, Tiggemann and Miller (2010) found the scale to have good internal reliability ($\alpha = .92$). In this study, Cronbach's alpha for the scale was .88.

Body Mass Index (BMI). BMI was calculated using adolescents' self-reported height and weight. BMI is a basic measure of health, such that it measures the ratio of fat to height; the higher the BMI, the larger the fat to height ratio. According to the Division of Nutrition, Physical Activity, and Obesity in the National Center for Chronic Disease Prevention and Health Promotion (2015), those with a BMI of 25 or above are considered overweight, while those with a BMI over 30 are considered obese. Those with BMI's under 18.5 are considered underweight.

Analysis Plan

Initial correlations were done to examine the relationships between parental factors and girls' drive for thinness. Then, structural equation modeling, specifically path analysis, was

employed to examine the direct effect of parental warmth on girls' drive for thinness, as well as to test a mediation model with average parental warmth as the independent variable, girls' drive for thinness as the outcome variable, and parental pressure to be thin as the mediator. Path analysis is appropriate even given the relatively small sample size (Sideridis, Simos, Papanicolaou, & Fletcher, 2014; Wolf, Harrington, Clark, & Miller, 2013). For instance, Mueller and Hancock (2008) suggest that there should be a minimum parameter-to-observation ratio of 5:1, and this study has a ratio of approximately 7:1. The parental warmth and parental pressure to be thin variables were made by adding the maternal and paternal scale scores together, then dividing by two, creating average warmth and average pressure to be thin variables.

In addition, this model was examined twice in order to test for the moderating effect of parents with the same versus different levels of warmth. In order to determine if parents had the same or different levels of warmth as one another, the measures for maternal and paternal warmth were separated into quartiles, and then rated as either low (in the bottom 25%), average, or high (in the top 25%). Then, for participants who completed warmth ratings for both parents, mothers and fathers were compared in order to determine if they were in the same group or not. Those that were in the same group were labeled as having the same level of warmth, while those that were not were labeled as having different levels of warmth. These path analyses took place in Amos 22.0.

Specification. It was hypothesized that parental warmth would directly affect both parental pressure to be thin and girls' DFT. Parental pressure to be thin would also directly impact girls' DFT. Furthermore, because BMI has been shown to impact both DFT and parental pressure (e.g. Bibiloni et al., 2013; Blowers, Loxton, Grady-Flessner, Occhipinti, & Dawe, 2003), it was included in the model, with direct impacts on those two variables. While exogenous

variables are generally allowed to correlate, there was no theoretical reason why BMI would covary with parental warmth, and therefore this link was not included. There were also indirect effects in the model, as indicated in Figure 2. As is stated in the introduction, there are reasons to suggest that the effect of parental warmth on girls' drive for thinness might vary depending on whether or not parents are the same or different in their levels of warmth. Thus, this model was also tested on two different groups, those with parents who had the same levels of warmth, and those who had differing levels of warmth, in order to look for other potential moderating effects of warmth. The chi-square value (CMIN in AMOS), Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR) were used to evaluate the goodness of fit of the model.

A nonsignificant chi-square value indicated good fit, though the chi-square value is sensitive to a variety of issues and a model with a significant chi-square value could still have been deemed a good model after the examination of other fit indices (Kline, 2005). A CFI value greater than .90 indicated good fit, while a RMSEA value of less than or equal to .05 also indicated good model fit (Kline, 2005). In addition, RMSEA values between .05 and .08 indicated an acceptable fit, while any values greater than .10 would have indicated poor fit (Kline, 2005). The closer the SRMR is to 0, the better the model fit, with values under .08 generally indicating a good fit (Hu & Bentler, 1999). Pairwise comparisons of the parameters were examined in order to compare pathways between the two groups and establish the existence of a moderating effect. Finally, model trimming was used to create the most parsimonious model possible. Figure 2 shows the overall model that was tested.

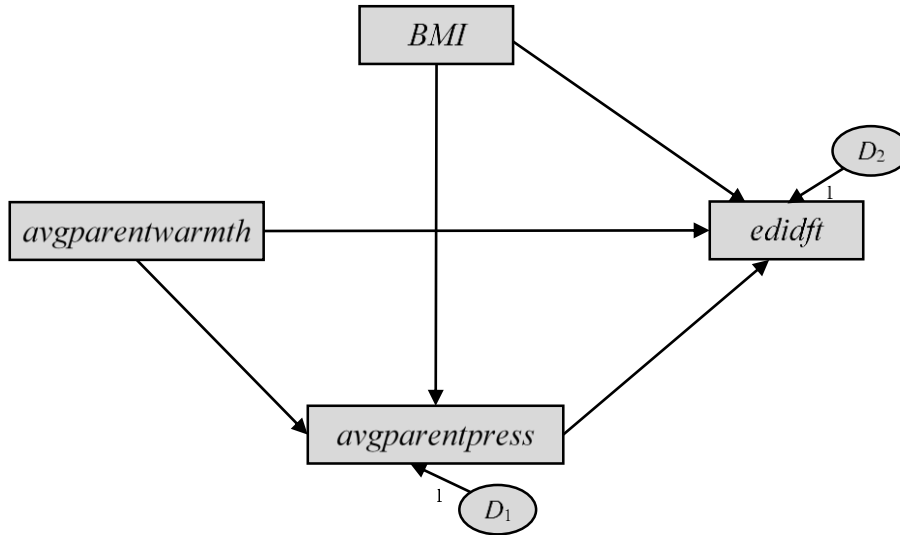


Figure 2. Mediation model that was tested.

Identification. In the specified model, there were fewer free parameters ($t = 17$) to be estimated than distinct moments ($u = 20$), and all latent variables had a metric, since the path from each disturbance to its endogenous variable was fixed at one. This model was also recursive, as there were no feedback loops nor were there correlated disturbance terms. Therefore, this model was identified.

RESULTS

Variable Descriptions

Means, standard deviations, and t-test results by same or different level of warmth are available in Table 1. None of the study variables' means significantly varied between the two groups. Correlations among the study variables were completed for the overall set of participants (see Table 2), participants with same warmth parents (see Table 3), and participants with different warmth parents (see Table 4). Correlations were significant and in the expected directions, with the exception of parental warmth and BMI, which were not associated for either group. In addition, parental warmth and girls' DFT were not significantly correlated in the group of participants whose parents had different levels of warmth.

Table 1

Means, Standard Deviations, and T-Tests by Same or Different Level of Warmth for the Major Study Variables

Variable	All Participants (<i>N</i> = 115) M (<i>SD</i>)	Same Warmth (<i>n</i> = 63) M (<i>SD</i>)	Different Warmth (<i>n</i> = 52) M (<i>SD</i>)	<i>t</i>	<i>df</i>
Parental warmth [^]	26.86 (6.16)	27.77 (7.12)	25.76 (4.58)	1.83	113
Parental pressure to be thin	0.97 (1.83)	0.98 (1.92)	0.95 (1.73)	0.09	113
Drive for thinness	12.49 (8.66)	11.65 (8.07)	13.50 (9.31)	-1.14	113
BMI [^]	21.32 (4.32)	21.69 (5.17)	20.88 (2.98)	1.06	113

Note. **p* < .05, ***p* < .01, ****p* < .001. A [^] next to a variable name indicates that the assumption of equal variances was violated, and that the equal variances not assumed t-value was used.

Table 2

Correlations of Study Variables with All Participants Included

Variable	1	2	3	4
1. Parental warmth	---	-.36***	-.35***	-.09
2. Parental pressure to be thin		---	.50***	.33***
3. Drive for thinness			---	.39***
4. BMI				---

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. $N = 115$

Table 3

Correlations of Study Variables with Participants with Same Warmth Parents

Variable	1	2	3	4
1. Parental warmth	---	-.32*	-.44***	-.06
2. Parental pressure to be thin		---	.48***	.33**
3. Drive for thinness			---	.43***
4. BMI				---

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. $n = 63$

Table 4

Correlations of Study Variables with Participants with Different Warmth Parents

Variable	1	2	3	4
1. Parental warmth	---	-.47***	-.22	-.25
2. Parental pressure to be thin		---	.54***	.29*
3. Drive for thinness			---	.44**
4. BMI				---

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. $n = 52$

Group Comparisons

The direct effect of parental warmth on girls' DFT was initially examined without a mediator, but controlling for BMI. This model had good fit, $X^2 = 3.47$, $df = 2$, $p = .18$; CFI = .96; RMSEA = .08; SRMR = .03. In the same warmth model, the path from warmth to DFT was significant, $\beta = -.42$, $p < .001$, as was the path from BMI to DFT, $\beta = .41$, $p < .001$. However, while the path from BMI to DFT remained significant in the different warmth model, $\beta = .41$, $p = .001$, the path from warmth to DFT was no longer significant, $\beta = -.12$, $p = .36$. This indicates the presence of moderation due to differences in parental warmth grouping, even without the inclusion of the mediator.

The proposed mediator was then added to the model. Overall, the initial model examining the direct relationship between parental warmth and DFT as well as their indirect relationship through parental pressure to be thin had good fit, $X^2 = 3.47$, $df = 3$, $p = .18$; CFI = .98; RMSEA = .08; SRMR = .02. All pathway estimates were significant, with two exceptions. The path from BMI to average parent pressure was not significant for the differing warmth group, while it was significant for the group that had the same levels of warmth. However, the unstandardized estimates for these paths were almost equal (B 's = .11, .13). This path also had the lowest difference score between groups, $z = .22$. As a result, this pathway was constrained to be equal. While the path from parental warmth to girls' DFT was nonsignificant for the differing warmth group, because differences in this path between groups is of relevance to Research Question 1, it was not initially constrained in order to ensure that any differences were still evident even with other modifications.

Pairwise comparisons of parameter estimates between the two groups revealed additional pathways were not significantly different, and could consequently be constrained in order to

achieve a more parsimonious, and therefore more desirable, model. Pathways were constrained one at a time starting with the pathway with the lowest z statistic. The model was trimmed in this manner until all nonsignificantly different pathways were constrained. Thus, all pathways were constrained to be equal with two exceptions. The pathway from parental pressure to be thin to girls' drive for thinness was left unconstrained, as this pathway became significantly different between groups as the other nonsignificant pathways were constrained, $z = 2.20$. Furthermore, while the direct path from parental warmth and girls' DFT remained significantly different between groups, $z = 1.98$, the standardized regression weight for this path in the differing warmth group was close to zero, $\beta = .07$. Consequently, the path for this group was constrained to zero in order to create a more parsimonious model.

The final model had good fit as well, $X^2 = 7.27$, $df = 6$, $p = .30$; CFI = .98; RMSEA = .04; SRMR = .03. See Figure 3 for the same warmth parents group model and Figure 4 for the different warmth parents model, both of which include the standardized Beta values for each path. See Appendices A and B for the unstandardized values. All remaining parameters were significant, and no MI's were suggested. It is important to note that this model was tested again in order to determine if inputting the variances of the variables using the Cronbach's Alphas found in this study significantly changed the model fit or the path weights. However, there was no significant difference using this method.

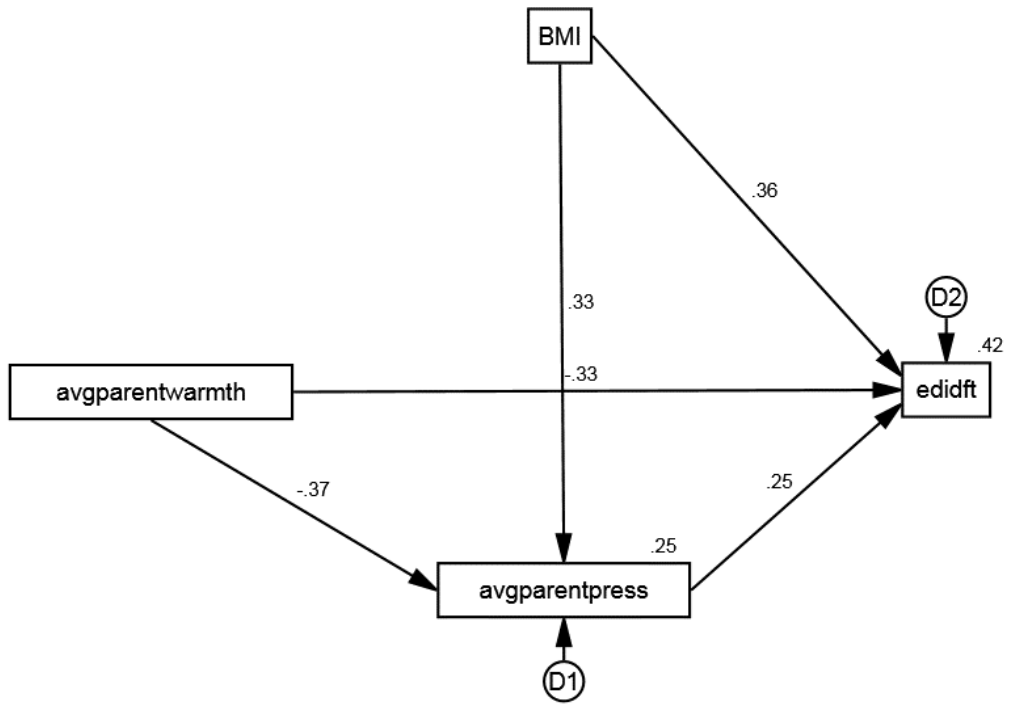


Figure 3. Model of the same warmth group including standardized Beta values

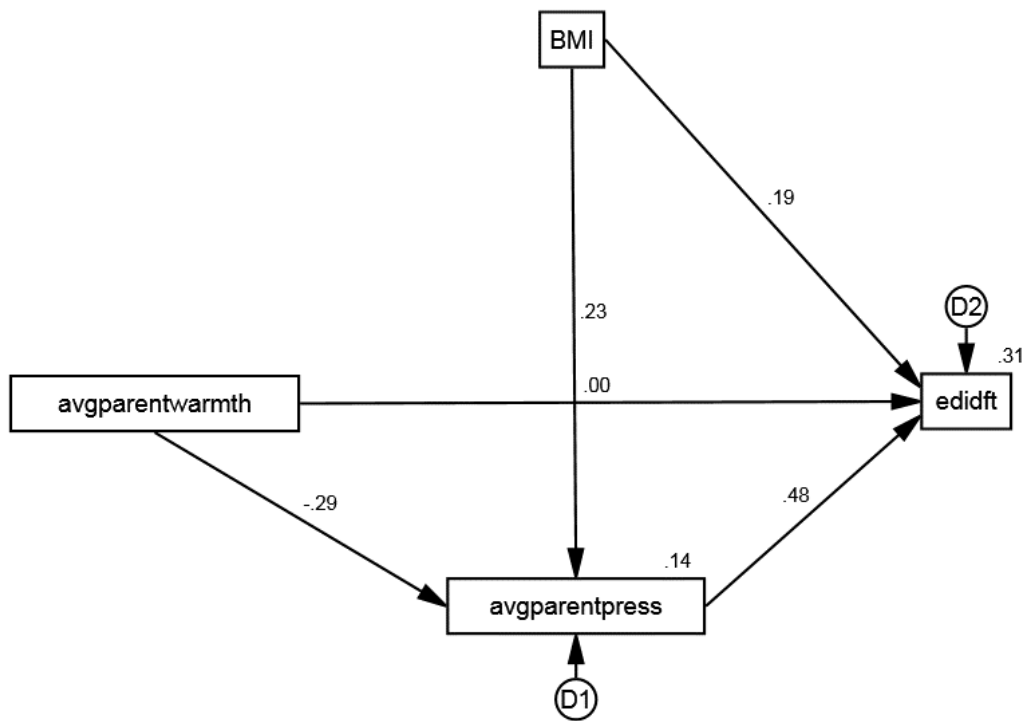


Figure 4. Model of the different warmth group including standardized Beta values

The final model was then used to address the hypothesis and research questions. Hypothesis 1 predicted that parental warmth would be significantly associated with parental pressure to be thin. This question is represented by path a in the final model, which shows a significant, negative association between parental warmth and parental pressure to be thin. This means that the higher in warmth that parents were, the less they pressured their daughters to be thin.

In order to answer Research Question 1, does parental warmth affect DFT, the direct path, between parental warmth and girls' drive for thinness was examined without the inclusion of the mediator variable. For girls whose parents had the same levels of warmth, there was indeed a significant relationship between the two variables, indicating that higher parental warmth was associated with less DFT for girls. However, for girls whose parents had differing levels of warmth, there was no relationship between warmth and DFT. These relationships are also studied by examining path c in the full model. In addition, path c also answers Research Question 2, which asked whether or not the relationship between girls' DFT and parental warmth differed depending on whether or not parents had the same or differing levels of warmth. The model indicates that having parents with the same or differing levels of warmth does indeed moderate the relationship between parental warmth and DFT.

The final research question, Research Question 3, sought to determine if the relationship between warmth and DFT continued to be significant, even when controlling for the mediating variable of parental pressure to be thin. This question is answered by examining the c' pathway in the model, which indicated that for those girls whose parents had the same level of warmth, only partial mediation occurred. This means that while more parental warmth was associated with less parental pressure to be thin, which in turn was associated with less DFT, a significant

relationship still remained between parental warmth and DFT, such that higher parental warmth continued to be associated with less DFT. Therefore, both moderation and mediation did occur in the overall model, as predicted.

DISCUSSION

The main goal of this study was to examine the combined effect of maternal and paternal warmth on girls' drive for thinness, as studies in the past have tended to focus on mothers and fathers separately (e.g., Tseng et al., 2014; Wade et al., 2013; Wertheim et al., 1992). The results suggest that while parental warmth did play an active role in girls' beliefs regarding thinness, the strength of that relationship depended on the combination of maternal and paternal warmth. Specifically, the more similar the parents were in their levels of warmth, the more strongly warmth appeared to impact girls' drive for thinness.

In addition, this study also sought to determine if a combined measure of parental warmth would continue to affect girls' drive for thinness, even when parental pressure to be thin was controlled for, unlike previous research (e.g., Rodgers & Chabrol, 2009) which suggested that separate maternal and paternal pressures would be more strongly related to drive for thinness than warmth. However, while parental warmth was significantly, negatively related to parental pressure, and therefore girls' drive for thinness, it continued to directly affect drive for thinness when both parents had the same levels of warmth. Therefore, it appears that focusing on indirect effects such as warmth should not be dismissed in lieu of examining direct effects, and that studies that do not address the combined effects of parents may actually underestimate parental effects on girls' drive for thinness.

Parental Warmth and Parental Pressure to be Thin

Despite the fact that studies often include indirect measures like parental warmth and direct measures like parental pressure to be thin as predictors of body dissatisfaction, to the author's knowledge, no studies have examined the impact of parental warmth on parental pressure. However, previous theory would suggest that parents who are high in warmth would

not be overly controlling or pressure their children in unhealthy ways (e.g., Baumrind, 1971; Baumrind et al., 2010). Therefore, it was hypothesized that parental warmth would be negatively, significantly associated with parental pressure.

Results from this study confirmed this hypothesis. Regardless of whether or not parents had the same or differing levels of warmth, parental warmth was significantly, negatively associated with parental pressure to be thin. While previous studies have suggested that factors such as parental pressure to be thin are of greater importance in the development of a healthy body image than more indirect factors such as parental warmth (e.g., Rodgers & Chabrol, 2009), this finding suggests that not examining indirect factors may potentially ignore the root cause of the development of poor body satisfaction, and drive for thinness, specifically.

There are several reasons why this connection should, and did, exist. The seminal work by Baumrind (1971) on parenting styles found that parents who were high in warmth, whether they were permissive or authoritative, did not use harsher punishment or discipline. Permissive parents did not attempt to pressure or control their children at all, while authoritative parents set boundaries, but explained why those boundaries existed and were willing to negotiate with children (Baumrind, 1971). Therefore, in applying this theory to eating behaviors, parents who are permissive would be unlikely to pressure their children regarding their weight at all, while authoritative parents would be more likely to encourage health in the children, not pressure them to lose weight.

The results of this study reflect this theoretical basis; parents who were rated as having high levels of warmth by their daughters also did not pressure their daughters to lose weight, while parents lower in warmth were higher in pressure. For those researchers and clinicians who seek to better their understanding of the most effective prevention, intervention, and treatment

strategies, this finding is of great importance. For instance, Baumrind and colleagues (2010) ascertained that children who grew up in households characterized by low warmth and harsh motivational strategies also grew up to have a variety of poor developmental outcomes, including poor mental health. Thus, if researchers neglect to emphasize indirect effects such as parental warmth that may be causing or increasing direct effects such as parental pressure, they are missing the full scope of the development of body dissatisfaction. This means that they may then miss the opportunity to develop the most helpful and healthful prevention, intervention, and treatment programs.

Parental Warmth and Girls' Drive for Thinness

Both the first and second research questions in this study addressed the relationship between parental warmth and girls' drive for thinness. More specifically, the first research question asked, does this relationship generally exist, while the second questioned whether that relationship would change depending on the combination of both parents' warmth. When all participants were assessed in the model, the relationship between parental warmth and girls' drive for thinness was highly significant, indicating that there was indeed an overall relationship between warmth and drive for thinness. However, when the group of parents who had the same level of warmth and the group that had different levels were compared separately, results revealed a stark difference; for those girls whose parents had the same levels of warmth, the relationship remained strong, but for those whose parents had different levels of warmth, there was no longer any significant relationship between warmth and drive for thinness.

The discovery that parental warmth generally affected girls' drive for thinness was in alignment with previous work on parental warmth and disordered eating (e.g., Canetti et al., 2008; Deas et al., 2011; Neumark-Sztainer et al., 2011). Drive for thinness is a well-known

precursor of disordered eating (e.g., Liechty & Lee, 2013), and therefore it seemed reasonable that such a connection would also exist between warmth and drive for thinness. However, the fact that parental warmth was not even initially associated with girls' drive for thinness for the group of parents with different levels of warmth is not as easily explained. For instance, in the Tseng et al. (2014) study, though paternal warmth was more strongly associated with disordered eating than maternal warmth, both were still significant, which would suggest that those parents who do not have the same levels of warmth could still jointly have a significant impact on girls' body image. It is possible that the nonsignificant result may stem from a methodological artifact resulting from the decreased range of scores possible in the different warmth group. Because the same warmth group includes parents who are both high or both low in warmth, this group will automatically have a wider range of warmth scores, as well as a higher standard deviation, than the different warmth group.

However, it is true that other studies have found that only maternal warmth predicted girls' body image and eating habits (e.g., Wade et al., 2013; Wertheim et al., 1992). If it is true that only one parent has a significant impact on girls' drive for thinness, it is possible that the combined effect of both parents would essentially be neutral. However, Jones & Blodgett Salafia (2016) suggest that differences in maternal and paternal importance may be due to the time period in which warmth is measured, as mothers appear to be more strongly influential in the development of body image when girls are younger (though fathers are still important as well), while only fathers' warmth is associated with their daughters' body image by emerging adulthood. The participants in this study ranged in age from young adolescents to emerging adults, which means that the issue of variation in parental importance depending on age should not be a problem, as both younger girls and young adults are represented.

In addition, it is possible that having parents with different levels of warmth creates a situation in which one level of warmth essentially negates the other. Family systems theory suggests that the individuals within a family are intertwined, and that the effect of one relationship between two family members cannot be completely separated from the relationships with other members of the family unit (Cox & Paley, 2003). Therefore, it is indeed possible that the strong relationship between maternal or paternal warmth and girls' drive for thinness could be neutralized by the other parent's lack of a meaningful relationship. For instance, if one parent is high in warmth while the other parent is low, the outcome is that child is neither at greater risk for nor protected against the development of a drive for thinness. However, when both parents have the same level of warmth, the combination of those relationships could lead children to be either more vulnerable to the development of poor body image, if both parents have low warmth, or protected against it, if both parents have high warmth.

Though the potential causes of these results are complex, they are undoubtedly of both scientific and practical significance for several reasons. Previously, the effect of parental warmth had only been studied with those who had developed disordered eating symptoms or clinically diagnosable eating disorders (e.g., Deas et al., 2011; Lobera et al., 2011; Mangweth et al., 2005; Neumark et al., 2000; Swanson et al., 2010), with the exception of a study by Haycraft and Blissett (2010), which did note that the relationship between authoritarian parents and the development of drive for thinness in girls was particularly strong. The current study establishes that there is indeed a relationship between warmth and drive for thinness, a known precursor to the development of disordered eating. This is important from a preventative standpoint, as improving parents' warmth towards their children can help prevent the development of thoughts

in girls that lead to the entrenchment of unhealthy and dangerous behaviors (e.g., Arcelus et al., 2011; Johnson & Wardle, 2005; Liechty & Lee, 2013; Treasurer et al., 2010).

In addition, relatively few studies in the body image and eating disorders field look at both parents, with the majority of research still focusing on mothers. Furthermore, even when studies do include both parents, they either do not examine them together and just attempt to compare effects (e.g., Tseng et al., 2014; Wade et al., 2013; Wertheim et al., 1992), or they ask about “parents” as a combined entity, without addressing how parents function both as separate entities and work together (e.g., Archibald, Graber, & Brooks-Gunn, 1999). The findings of this study point to the flawed nature of these trends, as it is clear that the combined effect of parents on girls’ drive for thinness significantly altered the relationship between warmth and drive for thinness. By examining parents separately, the field has implied that the effect of each parent is perceived and internalized separately by girls, when, in reality, this is most likely not the case. Therefore, future research must attempt to include both parents whenever possible, and, beyond that, must consider how the effects of each parent work together to change the mental health of girls.

Furthermore, this study has practical significance for the lives of families, outside of the scientific field. Despite a lack of evidence supporting the need for gender-typed parenting, stereotypically speaking, mothers have often been portrayed as the warm parent, whereas to be “manly,” men, and therefore fathers, should show less emotion (Biblarz & Stacey, 2010). It is important to note that having two parents with different levels of warmth was not related to higher levels of drive for thinness in girls, meaning that there is not evidence that this could lead to increased body dissatisfaction or disordered eating. However, the findings did indicate that parents who were both high in warmth had daughters who were lower in drive for thinness.

Given that warm parenting is associated with healthier outcomes both generally speaking and specifically for body image in girls (e.g., Baumrind et al., 2010; Haycraft & Blisset, 2010), and because the relationships among mothers, fathers, and daughters are inevitably intertwined (Cox & Paley, 2003), these results are not surprising, but they are potentially of great significance to the future healthiness of both children and the family unit as a whole. Specifically, having two parents high in warmth could provide a protective mechanism against the development of drive for thinness, which would lead to better mental and physical health for the adolescent, as well as less conflict and stress among the family unit.

A Mediating Effect? Parental Pressure to be Thin versus Parental Warmth

Previous research has consistently suggested that direct effects such as parental pressure to be thin are of greater importance to the development of girls' body image than indirect effects such as parental warmth (e.g., Rodgers & Chabrol, 2009). The current study, however, found that when the warmth levels of both parents were combined, warmth continued to affect girls, even when the effect of parental pressure was considered. This emphasizes the need for a continued exploration of all possible influences on girls' drive for thinness and body dissatisfaction, with no favoring of a certain set of potential direct causes, as parental warmth still seems strongly related to a healthier body image among adolescent girls.

In addition, not only did the combined warmth of both parents continue to affect girls' drive for thinness, but it also significantly changed the relationship between parental pressure and girls' body image. Girls whose parents had the same levels of warmth appeared to be less affected by parental pressure to be thin than girls whose parents had different levels of warmth. It is possible that, even when warm parents pressure their daughters, that pressure is not viewed or interpreted harshly. This means that a "harsh" comment, such as "boys might like you more if

you lost weight,” may not appear as harsh to daughters who are involved consistently in warm interactions with their parents. Conversely, a pressuring comment may be seen as normative to those girls whose parents are both low in warmth. For those whose parents have different levels of warmth, the perceived harshness of the comment could depend on whether or not the parent who makes the comment is the one higher or lower in warmth. In addition, it could be that the response of the other parent plays a role in how the comment affects the child. For instance, if the parent lower in warmth makes a harsh comment, and the parent who is warmer does not respond in order to avoid conflict, the daughter might interpret that lack of response as agreement by the warmer parent. Furthermore, if the warmer parent does make the harsh comment, the parent lower in warmth could agree with the other parent, adding to the perceived negativity about the girl’s weight or appearance.

Alternatively, it could be that comments pressuring girls to lose weight still negatively affect daughters who have parents who both have high levels of warmth, but that that warmth itself buffers the effect of the negative comments. So, girls whose parents have the same levels of warmth would still perceive the pressuring comment in the same way as those that have parents with differing levels of warmth, but the comments themselves would not unduly stress the parent-child relationship. However, to the author’s knowledge, there is not any available literature to scientifically support why this difference between groups appears to exist. Overall, however, this study suggests that even if parents who have the same levels of warmth are pressuring their daughters, having those similar levels, providing that they are both high in warmth, provides a barrier against the development of body dissatisfaction. This emphasizes the importance of teaching both parents to be high in warmth, and of including general parent training within prevention, intervention, and treatment programs.

Strengths and Limitations

There are some notable limitations to this study. For instance, as was consistent with the general population of the area, the vast majority of the participants were white. This does limit the generalizability of the results, and future studies should seek to include a more diverse population. Relatedly, all of the participants' parents were heterosexual couples. Because the most significant findings of this study were due to having two parents with the same levels of warmth, it is likely that this would hold true regardless of the sex of the parent. However, this would need to be scientifically replicated in lesbian, gay, and/or bisexual parent populations. In addition, it would be of interest to study this relationship in a single parent household, as the current model cannot address the unique dynamics that occur in such families.

The sample size was also small, which was both a limitation and a strength of the study. The model could not be expanded to include other potentially relevant parent and child characteristics, given the need to ensure that the parameter-to-observation ratio stayed at or above 5:1 (Mueller & Hancock, 2007). Future studies should seek to include a larger sample population, in order to develop more comprehensive models. For instance, it would have been of interest to further split parents into groups, such that differences among subgroups (e.g., parents both high in warmth, parents both low in warmth, etc.) could be further explored. Future studies should seek to understand how these subgroup differences continue to impact girls' body image development. However, the sample size was acceptable for the current model (Mueller & Hancock, 2007; Sideridis et al., 2014; Wolf et al., 2013), and the fact that significant differences were still found given the low power of the sample reflects the strength and importance of combining parental effects.

Finally, one potential limitation of this study is that parent's warmth was measured via girls' perceptions of their warmth, not actual observations. However, this could also be considered a strength, as how girls perceive their parents' warmth may ultimately be more influential than observed interactions in a laboratory. Observed interactions are subject to bias, as parents may act in ways that they consider more socially appropriate, such as by acting more warm with their children than they would in everyday life. For instance, researchers have found that agreement between family members about factors such as positive affect was generally stronger than agreement between a family member and the scientific observer (e.g., Henggeler, Borduin, & Mann, 1987). In addition, the child's perception may be of more importance than the parent's perception of their behaviors. For example, one study found that adolescents experiencing depression rated their parents' levels of communication as significantly lower than parents themselves rated their communication (Yu et al., 2006), indicating that it is the child's perception that matters most in the development of their mental health. This suggests that, even if parents do exhibit classic signs of being warm, if their daughters still consider them to be low on warmth, then this could more strongly affect their development of drive for thinness.

Nevertheless, the study also has several strengths. The vast majority of studies (e.g., Deas et al., 2011; Lobera et al., 2011; Mangweth et al., 2005; Neumark et al., 2000; Swanson et al., 2010) have examined parental warmth only in connection with disordered eating, not body image variables. By studying the precursors to disordered eating such as drive for thinness, this study illuminates the ways in which parents can help their daughters prevent the development of disordered eating, instead of waiting until the problem develops to address potential unhelpful family environments.

This study also directly examined the link between parental warmth and parental pressure to be thin. This relationship has been theoretically assumed to exist, but to the author's knowledge, has not actually been empirically examined. Therefore, the results of this study shed light on the actual link between broader parenting habits and those practices directly related to body image and eating. By continuing to develop a better understanding of the complex pathways through which body dissatisfaction and disordered eating develop, researchers can continue to create better prevention, intervention, and treatment programs for girls and their families.

Perhaps most importantly, to the author's knowledge, this is the first study to examine the combined effect of both parents' warmth on girls' body image. This is imperative, as isolating each parent does not realistically reflect the everyday experiences of adolescents. For instance, Deal and colleagues (1999) found that the context in which families were observed (mother-child, father-child, husband-wife, or all three together) significantly changed how the parents interacted with one another. Because families work as a system, and the relationships between family members are inevitably intertwined (Cox & Paley, 2003), such changes in parental communication and interactions would undoubtedly affect children in the unit as well. Indeed, in the same set of adolescent girls examined in the current study, marital conflict was associated with girls' drive for thinness (Blodgett Salafia, Schaefer, & Haugen, 2014).

In addition, those researching body dissatisfaction and disordered eating tend to focus on risk factors, such as poor family functioning or marital conflict, that lead to the development of these problems. This can be problematic, however, as it may inadvertently shame parents for engaging in unhealthy behaviors that "harm" their daughters. Therefore, another major strength of this study was its focus on protective mechanisms within family systems that help prevent the

onset of unhealthy thoughts. Such research helps to enable families to build healthy relationships and systems, without placing blame.

This study therefore contributes a novel understanding of the parental impacts on girls' body image. Future studies should seek to include adolescent males, in order to determine if there is a parenting factor that could provide a similar barrier against body dissatisfaction for boys. In addition, studies should examine how the combined effect of other parenting habits, such as control or communication, could similarly decrease adolescents' likelihood of developing poor mental and physical health. Finally, this suggests that scientific researchers should not ignore indirect effects in favor of direct effects because continuing to do so may not fully address how detrimental having a family that systematically functions in unhealthy ways can be on body image development.

Implications

Overall, the results of this study highlight the need for those involved in prevention, intervention, and treatment programs to ensure that both parents are involved in the research and/or action processes. When both parents were high in warmth, girls exhibited less drive for thinness and appeared to be less affected by parental pressure to be thin, indicating that parent training programs that involve both mothers and fathers could lead to significant and noticeable differences in girls' body image. For instance, while interventions on direct effects such as parental pressure have been successful in reducing girls' drive for thinness (e.g., Corning et al., 2010), it is possible that by addressing additional indirect variables such parental warmth, effect sizes could increase.

Indeed, more generally speaking, higher parental warmth is associated with less unhealthy parenting strategies, which are associated with less poor mental health outcomes in

adolescents (Baumrind et al., 2010). More specifically, this means that by addressing parental levels of warmth, parental pressure to be thin could be even further decreased, leading to stronger and more long-lasting impacts on girls' drive for thinness. Because this study also found that parental warmth was significantly related to girls' drive for thinness, this avenue of intervention must be explored in order to prevent the development of negative health outcomes such as electrolyte imbalances, cardiac arrhythmias, and even death (Arcelus et al., 2011; Treasurer et al., 2010).

Furthermore, addressing parental warmth could improve a host of other parenting behaviors, leading to more widespread improvements in adolescents' health. Parents who are high in warmth tend to have children who develop more healthily in a wide array of areas such as in academia or with peer relationships, particularly when that warmth is combined with moderate levels of control (e.g., Baumrind et al., 2010; Steinberg, 2011). This suggests that a more general parenting intervention on warmth could not only help parenting behaviors related to their daughters' body image development and eating, but simultaneously improve other parenting habits and therefore children's overall health. Given the limited time and resources of parents, schools, and social workers to develop or attend a multitude of specific programs, it is encouraging for the body image research field to recognize that improving general parenting characteristics such as warmth can indirectly lead to increases in adolescents' body image.

In addition, it is clear that parent characteristics that are present from the moment of the child's birth, such as warmth, can have important effects on the development of girls' mental health in the future. If policies and programs related to body dissatisfaction and unhealthy eating continue to suggest intervening or treating once problems begin to escalate during adolescence (e.g., Bucchianeri et al., 2013; Calzo et al., 2012), those programs and policies are at substantial

risk of not being able to fully treat the problem. This is because the development of these problems begins as early as ages four to six, meaning that by adolescence, these problematic ways of thinking could already be deeply entrenched (Dohnt & Tiggemann, 2006; Musher-Eizenman et al., 2003). By identifying characteristics such as warmth and enabling programs that help both mothers and fathers treat their daughters with warmth and love early on in their daughters' lives, girls can be provided with real and significant barriers against an unhealthy future.

Conclusion

The results of this study suggest that if researchers do not examine the combined effect of both parents, they may not accurately identify the most effective ways to prevent the development of body dissatisfaction and disordered eating among girls. By examining both parents together, this study not only found that parental warmth impacted girls' drive for thinness, but that parental warmth continued to strongly impact girls' drive for thinness even when parental pressure to be thin was examined, if parents have the same levels of warmth. In addition, if parents had the same levels of warmth, even if they pressured their daughters to lose weight, their daughters were less affected by that pressure.

Therefore, future preventative efforts must seek to include both parents, not just the mother, as is often the case both in research and intervention and treatment programs. The findings of this study suggest that increasing parental warmth can have widespread effects not only on girls' body image, but on how they perceive or internalize negative comments about eating and exercise. If parents are given the right tools to parent with, in this case information on how to parent warmly, they can give their daughters a better chance at living happier, healthier lives.

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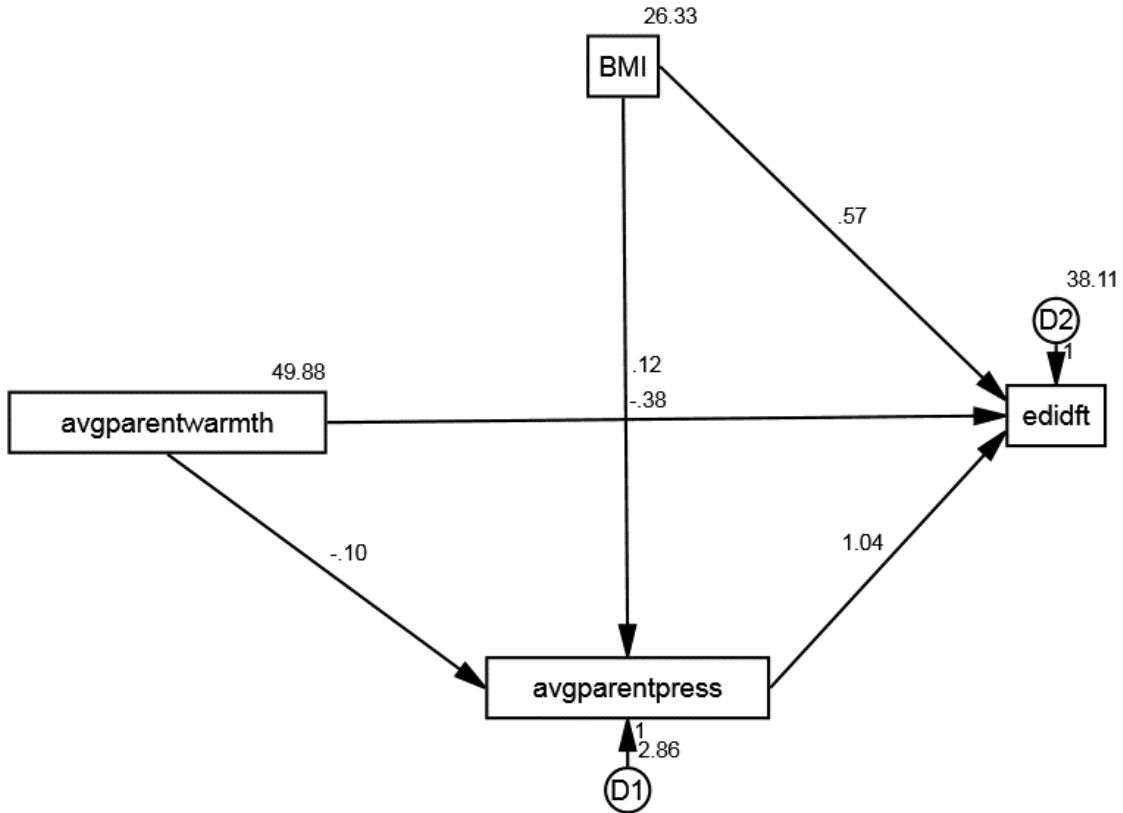
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**APPENDIX A. MODEL OF THE SAME WARMTH GROUP INCLUDING
UNSTANDARDIZED BETA VALUES**



**APPENDIX B. MODEL OF THE DIFFERENT WARMTH GROUP INCLUDING
UNSTANDARDIZED BETA VALUES**

