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Peer Teasing, Body-Image and Eating Problems among Women

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ABSTRACT

This study examined the contribution of peer factors (teasing), psychological characteristics (self-esteem, self-construal), physical factors (BMI), and family environment (cohesion, expressiveness, conflict, independence, and control) in the development of body-image disturbance and eating problems among young adult women. Eighty young adult women from New England participated in this study. They completed self-report questionnaires on teasing, psychological characteristics, body-image, and eating patterns. We identified peer factors (past teasing), physical factors (BMI), specific psychological characteristics (self-esteem, independent self-construal), and family environment (independence) as significant predictors of body-image disturbance and eating problems. Discussion and implications regarding the need for early prevention strategies to address peer teasing for adolescent girls have been included.

INTRODUCTION

Body-image disturbance and eating disorders have increasingly been considered major health risks among young women. The growing number of adolescents and adults with clinical and subclinical eating problems necessitates the in-depth inquiry of biopsychosocial contributing factors. While there is recent research attention regarding men with eating disorders, the increasing prevalence of eating pathology among young women is cause for concern among clinicians, researchers, and educators. The DSM-IV-TR (2000) estimates that the lifetime

prevalence of anorexia is 0.5% and 1-3% suffer from bulimia nervosa. This small percentage refers to those who meet diagnostic criteria for eating pathology but does not account for those young women with subclinical eating problems like dieting, restricting, compulsive exercise, binging, and purging (Shisslak, Crago, & Estes, 1995). Some suggest considering subclinical dieting behaviors and eating disorders as two points along the same continuum of eating disturbance (Polivy & Herman, 1987) indicating the importance of investigating the range of maladaptive eating patterns.

Body-image disturbance is often a significant risk factor in the development of eating problems. A large body of empirical literature supports the role of body-image disturbance in the development and maintenance of eating problems in adolescent females (Fabian & Thompson, 1989; Gardner et al., 2000; Jones, 2004; Neumark-Sztainer et al., 2003; Stice & Whitenton, 2002). Researchers and clinicians are focusing on understanding the complex developmental progression of eating problems and body-image disturbance to facilitate appropriate interventions and prevention programs at various settings. While these researchers have adopted a multi-dimensional model including biological, psychological, sociocultural, and familial factors, fewer studies have explored past peer teasing experiences and the relationship with eating problems. Young adult women who have not addressed these past experiences may still be at risk for current or future health risks.

Biological models include both genetic studies and consideration of physical factors such as body-mass index (BMI). Body-mass index (BMI), or the ratio of height to weight, is often considered as a physical factor in the development of body-image disturbance and eating problems. As expected, young women with higher BMI are more likely to show increased body-image disturbance and may be more prone to engage in maladaptive behaviors like restricted or purging (Gardner et al., 2000; Neumark-Sztainer et al., 2003; Paxton, Eisenberg, & Neumark-Sztainer, 2006; Stice & Whitenton, 2002). Adolescents and young adults with greater BMI may experience this increased body dissatisfaction as they are further away from attaining cultural norms of thinness.

Research supports the role of a variety of psychological factors as correlates of eating problems. Such psychological factors include self-esteem, self-construal, and self-discrepancy. Self-esteem relates to a person's global self-worth or self-acceptance (Rosenberg, 1965). Negative perceptions of one's body and low self-esteem have been linked to level of body-image disturbance and eating problems (Fabian & Thompson, 1989; Gleason, Alexander, & Somers, 2000; Grilo & Masheb, 2005; Paxton et al., 2006). Self-construal is a psychological concept that relates to the degree to which a person perceives herself to be separate and autonomous (independent) or connected (interdependent) (Markus & Kitayama, 1992; Singelis, 1994). Green and colleagues (2006) indicated the close link between self-construal and body image. Women with lower levels of independent self-construal may have less self-confidence and thus seek external validation for their self-worth, further internalizing societal messages of ideal body shape.

Dysfunctional family relationships and styles of communication within the family environment are often identified as high factors in the development of eating problems. Minuchin and colleagues (1978) identified certain familial characteristics experienced by

members with eating disorders such as enmeshment, overprotectiveness, rigidity, and lack of conflict resolution. Moos and Moos (1994) highlighted relationship dimensions, personal growth, and system maintenance as integral to the family environment. Families differ within their level of cohesion (commitment and support), expressiveness (encouragement of the expression of feelings), conflict (fighting and anger among family members), independence (autonomous, independent decision-making), and control (adherence to strict rules). Dysfunctional families may discourage expression and independence in favor of control, and may be low in cohesion and high in conflict. While previous literature has emphasized the impact of the family system on eating pathology, it is still crucial to understand the multi-factorial nature of eating abnormalities.

According to social learning theory, perceptions regarding ideal body shape are greatly influenced by cultural and media messages regarding attractiveness (Striegel-Moore, Silberstein, & Rodin, 1986). Messages regarding the thin ideal are internalized by young women and further perpetuated and modeled by parents and peers, leading some young women to extreme measures to achieve this ideal body image. Gender socialization theory (Bem, 1981) highlights the importance of physical attractiveness in relating with others in the development of self-worth in women. Thus, one feels pressure from peers to adhere to these ideals, facilitating body-image disturbance and maladaptive eating.

Family, peers, neighborhood and the school environment are powerful socializing agents of human development (Bronfenbrenner, 1979). Peer acceptance in adolescence provides validation and support for healthy psychological growth in adolescence. There is evidence that young women may seek a friendship group with similar body-image concerns and dieting practices, further increasing their risk for engaging in maladaptive eating behaviors (Paxton et al., 1999). Wang et al. (2006) found that girls with smaller body sizes were more popular while girls with larger body sizes scored lower on measures of social preference and popularity.

Recently, Jones and Crawford (2006) proposed three domains within the peer environment including appearance culture, evaluations, and peer acceptance. Peers perpetuate messages regarding appearance in the form of conversations about beauty and dieting, pressure for conformity, teasing and negative evaluation, and peer rejection. Specifically, the role of peer teasing has been neglected in empirical literature, often appearing as a few isolated items in methodology. Young women, who are teased about their appearance, including their weight, are rejected by their peers and may resort to maladaptive coping methods like dieting to control their negative feelings and change their appearance. Understanding the role of peers in a complex multidimensional model is crucial for developing appropriate interventions and prevention programs.

Body Image Disturbance, Maladaptive Eating Pattern and their Correlates

A growing body of literature investigating the possible correlates of body-image disturbance and maladaptive eating patterns has been established, with some areas receiving more empirical attention than others. The relationship among peer factors, psychological characteristics, physical features, and family environment has been linked to body-image disturbance and maladaptive eating patterns.

While research on the role of peers in the development of body image disturbance and eating problems is limited, there are several empirical studies worth mentioning here. Research indicates the experiences of peer teasing are not only related to body-image disturbance (Fabian & Thompson, 1989; Neumark-Sztainer et al., 2003), but also significantly predict greater body-image disturbance and eating problems (Gardner et al., 2000; Gleason et al., 2000; Grilo & Masheb, 2005; Wertheim, Koerner, & Paxton, 2001). Despite this promising evidence, some researchers failed to confirm the significant predictive value of peer teasing in body-image dissatisfaction (see Paxton et al., 2006; Stice & Whitenton, 2002). It is interesting to note that in both of these studies teasing was assessed using only two items, indicating the possible role of this methodological weakness in these conclusions. Thompson, Coovert, and Stormer (1999) found that body-image disturbance may act as an important mediator in the relationship between teasing and eating disturbance.

If teasing is a common experience among adolescents, it is necessary to understand why some develop negative outcomes while others do not. When Cash (1995) interviewed young adult women about past teasing experiences during their adolescent years, he found that it was the perceived severity of teasing that related to future body-image rather than just the presence or absence of teasing experiences.

Thin-ideal internalization, self-esteem, self-image discrepancy, and self-construal may play a role in mediating the relationship between sociocultural messages and personal feelings about one's body. Stice and Whitenton (2002) found thin-ideal internalization, a construct related to expected psychological and social benefits from achieving thinness, to be predictive of body dissatisfaction. Low self-esteem is also associated with body-image disturbance (Fabian & Thompson, 1989; Paxton et al., 2006). Self-image discrepancy is conceptualized as the difference between how a person perceives their current body size and what they ideally want their body size to be. Not surprisingly, those with the greatest degree of self-image discrepancy also score higher in terms of body-image disturbance and eating problems (Gardner et al., 2000). Finally, the role of self-construal in the development of body-image disturbance has been recently investigated. Although research in the role of self-construal is limited (see Green et al., 2006; Opitz & Ray, 2003), there is some recent evidence that independent self-construal, or the tendency towards separateness and autonomy, may be a predictor of body-image disturbance and maladaptive eating patterns (Rideout & Ray, 2005). Thus, more in depth inquiry is needed regarding psychological characteristics.

There is a substantial body of research regarding familial influence in the development of body-image disturbance and eating problems. Neumark-Sztainer and colleagues (2003) found that family norms regarding weight and family connectedness were correlated with weight-body concerns. Families are supposed to act as a source of social support for young women. A lack of social support is predictive of body dissatisfaction (Stice & Whitenton, 2002), while Paxton et al. (2006) did not find support for the role of parental dieting in predicting body dissatisfaction in a longitudinal investigation. In some recent studies, researchers have found family dysfunction to be a predictor of body-image dissatisfaction and eating problems (Rideout & Ray, 2005; Riff-Melnik & Ray, 2002).

The DSM-IV-TR (2000) indicates that the developmental course of anorexia nervosa begins in mid to late adolescence, while bulimia nervosa may begin slightly later in late adolescence or early adulthood. By the time some of these young women reach diagnostic status, many have engaged in maladaptive eating habits for a period of years and their negative feelings regarding their body have existed for even longer (Gardner et al., 2000). Rideout and Ray (2005) found that girls between the ages of 13 to 15 exhibited the highest levels of body-image disturbance and maladaptive eating patterns. While this research supports the notion that early adolescence is the most vulnerable time during the development of body-image disturbance, it is limited by its cross-sectional design. In a longitudinal investigation, Attie and Brooks-Gunn (1989) assessed eating patterns and body-image issues among girls during middle and high school and again two years later when participants were in late high school. The researchers concluded that preadolescent or adolescent girls with the greatest body-image dissatisfaction at initial assessment were significantly more likely to develop eating problems two years later.

Moreover, young girls in our society experience powerful societal messages of thinness and peer pressure to conform to thin body ideals. In light of the above mentioned literature, the goal of the present study was to evaluate factors that contribute to the emergence of body-image disturbance and maladaptive eating among non-clinical young adult women (age 18-25). More specifically, this study examined the interrelationship among peer factors (peer teasing), psychological characteristics (self-esteem, self-construal), physical factors (BMI), and familial environment (cohesion, expressiveness, conflict, independence, and control) as well as their roles as predictors of current body-image disturbance and maladaptive eating.

We predicted that greater level of peer teasing will indicate a positive relationship with body image disturbance. Greater level of peer teasing will indicate a positive relationship with maladaptive eating. Greater level of peer teasing will indicate a negative relationship with adaptive coping strategies and a positive relationship with maladaptive coping strategies.

We also predicted that greater levels of peer teasing will be negatively related to psychological factors of self-esteem and independent self-construal. Greater levels of peer teasing will have indicated a positive relationship with physical factors (BMI). Greater levels of peer teasing will be negatively related to family factors of cohesion, expressiveness, and independence, and positively related to conflict and control.

Finally, we sought to assess the relative contributions of peer teasing, psychological characteristics, physical factors, and family environment as predictors of body dissatisfaction (body-image disturbance, perceived self-image discrepancy, perceived self-image discrepancy by same sex, and perceived self-image discrepancy by opposite sex) and maladaptive eating pattern among young women.

METHOD

A total sample of 80 women from Massachusetts completed a set of self-report questionnaires and a brief personal interview with the researcher. Participant ages ranged from 18 to 25 years (M = 19.02; SD = 1.25). The present study included participants from Caucasian

(73.8%), Asian (6%), African American (1.2%), Indian (1.2%), and European (2.4%) ethnic backgrounds.

Participants were recruited from a college campus and through advertisements in Massachusetts. Participants received credit for their participation. We conducted both self-report questionnaires and interviews privately with the participants over a period of 9 months. Each participant spent approximately 60 minutes to complete the study.

Measures

Body Mass Index (BMI) was calculated for each participant based upon self-reported height and weight and using the standard formula: weight (lb) / height (in) ^{2} x 703. The overall sample exhibited a mean BMI of 21.71 (*SD* = 2.84).

Demographic questionnaire. Information regarding age; grade; ethnic background; primary language; parental occupation; height; weight; age of menarche; exercise patterns; dieting information; foods preferences; number of close friends (male and female); enjoyable activities; and personal hobbies was collected through this questionnaire.

Self-Esteem (Rosenberg, 1965). The Rosenberg Self-Esteem scale was used to assess participants' global self-esteem. The Rosenberg Self-Esteem Scale contains 10 items (e.g. *I feel I have a number of good qualities)*, and participants answer using a four point Likert-type scale with responses ranging from *strongly disagree* (1) to *strongly agree* (4). Scores can range from 10 to 40, with higher scores reflecting higher self-esteem. The Rosenberg Self-Esteem Scale demonstrates good reliability and validity and is one of the most widely-used scales (Fleming & Courtney, 1984).

Self-Construal Scale (SCS; Singelis, 1994). This measure is used to assess participants' independent and interdependent self-construal. The SCS consists of 30 items: 15 of the 30 items assess independent self-construal, or the tendency to separate and develop autonomy, and the remaining 15 items assess interdependent self-construal, or the tendency to remain connected and associated with others. Participants respond via a 7-point Likert-type scale – from *strongly disagree* (1) to *strongly agree* (7). High scores on each of the scales indicate higher degree of independent or interdependent self-construal. Cronbach's alpha ranges between .69 – .70 for independent, and .73 – .74 for interdependent self-construal.

Perception of Teasing Scale (*POTS;* Thompson, Cattarin, Fowler, & Fisher, 1995) is a retrospective self-report measure used to assess frequency and effect of peer teasing experiences. The POTS contains 12 items; it is divided into two subscales with the first 6 items addressing Weight-Related teasing (e.g. *Peers made jokes about you being too heavy*) and the last 5 items addressing Competency teasing (e.g. *Peers said you acted dumb*). We added a 12th item (e.g. *Peers teased you about a part of your body like your hair, eyes, ears, nose, lips/mouth, shoulders, arms, chest, stomach, legs, or feet, etc.)* in order to address teasing related to a specific body part. Participants were asked to provide their responses for two different areas of the peer teasing experience. First, participants rank frequency of past teasing on a five-point Likert scale – from *never* (1) to *very often* (5). If participants report any frequency of teasing (above *never*), they are asked to rate how upset they were on a 5 point scale – from *not very*

upset (1) to *very upset* (5). Internal reliability, as measured by Cronbach's alpha, was .88 for Weight-Related teasing and .84 for Competency teasing scale. Test-retest reliabilities were sufficient for both frequency and effect of Weight-Related Teasing (.90 and .85, respectively) as well as for frequency and effect of Competency-Related Teasing (.82 and .66, respectively). Research indicates that the Weight-Related Teasing Subscale shows significant correlations with some well-established measures. For example, correlations range from -.18 to -.27 ($p < .05$) for self-esteem (Rosenberg Self-Esteem Scale, 1965), from .43 to .48 ($p < .001$) for body image disturbance (Physical Appearance State and Trait Anxiety Scale, 1991), and from .22 to .44 for eating disturbance (Eating Disorders Inventory, 1983).

Figure Rating Scale (FRS; Stunkard, Sorenson, & Shulsinger, 1983). The FRS is a projective measure used to assess participant's perceived degree of self-discrepancy between current and ideal body-image. The FRS consists of four questions: (a) current body size; (b) ideal body size; (c) ideal body size found most attractive by opposite sex peers; and (d) ideal body size found most attractive by same sex peers. Participants respond using depictions of nine numbered silhouettes ranging from severely thin (*1)* to severely obese (*9*). Three discrepancy scores are calculated: (a) ideal – current; (b) ideal by opposite sex – current; and (c) ideal by same sex – current. Higher discrepancy scores indicate greater level of self-discrepancy, meaning that participant's ideal body size was further from their current body size. Negative self-image discrepancy scores, obtained subtracting current body size from ideal body size, indicate the desire for a significantly smaller body size. This scale displays good validity with concurrent measures of actual weight and BMI (Cohn et al., 1987).

Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987). This scale is a 34-item self-report measure used to assess body-image disturbance or level of concern with overall body shape and appearance. For each item (e.g. *Have you become afraid that you might become fat?*), participants are instructed to rate how often they felt that way about their body or appearance in the past four weeks. Participants used a 6-point Likert-type scale ranging from *never* (1) to *always* (6). Higher scores indicate higher level of body image disturbance. The BSQ has good discriminate and concurrent validity and indicates a strong positive correlation ($r = .61$) with the *Eating Attitudes Test* (Cooper et al., 1987).

Eating Attitudes Test (EAT – 26; Garner, Olmstead, Bohr, & Garfinkel, 1982). The EAT-26 is a self-report measure of eating attitudes and behaviors which contains 26 total items (e.g. *Feel that others would prefer I ate more; Vomit after I have eaten*). Participants respond using a Likert type scale ranging from *always* to *never*, with the three most symptomatic responses scored on a 3-point scale. The response *always* received a score of 3, the response *usually* received a score of 2, and the response *often* received a score of 1. The other three responses (*sometimes, rarely,* and *never*) received a score of 0. Higher scores on the EAT-26 reveal greater level of maladaptive eating. Internal reliability, as measured by Cronbach's alpha, ranges from .83 to .90 for clinical (Anorexia Nervosa group) and non-clinical populations. Research on this scale indicates good reliability and validity in a variety of clinical and non-clinical samples.

Family Environment Scale (*FES;* Moos & Moos, 1994). The Family Environment Scale is a self-report measure used to assess participants' perception of their family environment. It contains 10 subscales of 90 total items of which 45 items were selected for the purposes of this

research for theoretical reasons. The five subscales selected for this research include Cohesion (commitment and support), Expressiveness (encouragement of direct expression of feelings), Conflict (conflict and anger among family members), Independence (self-sufficiency and independent decision-making), and Control (adherence to a strict set of rules). Participants are asked to respond using dichotomous *true* or *false* answers (e.g. *Family members often keep their feelings to themselves).* Scoring is accomplished by assigning a score of one or zero to each item depending on the direction of the keyed response, using a template accompanying the scale. Higher scores in each subscale indicate higher levels of cohesion, expressiveness, conflict, independence, and control. Moos and Moos (1994) noted adequate reliability of the five scales with alphas ranging from .61 – .78. Eating disorder literature that includes family dynamics has included the FES (Brookings & Wilson, 1994).

RESULTS

This study was an exploration of several factors contributing to the development of body-image disturbance, eating problems, and maladaptive coping style among young adult women. The role of peer teasing, specific psychological characteristics (self-esteem and self-construal), physical factors (BMI), family environment (cohesion, expressiveness, conflict, independence, and control), body-related factors (body-image disturbance, perceived self-image discrepancy, and perceived self-image discrepancy by same sex and opposite sex members), and maladaptive eating were assessed using univariate and multivariate analyses.

The first aim of the current study was to assess the interrelationship among peer teasing, psychological characteristics, physical factors, family environment, body-related factors, maladaptive eating patterns, and coping strategies. The stated hypotheses were partially supported.

Table 1
Overall Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Peer teasing	___														
2. Independent SC	-.45*	___													
3. Interdependent SC	.21	-.17	___												
4. Self-esteem	-.52*	.56*	-.16	___											
5. BMI	.05	.02	-.09	-.05	___										
6. Cohesion	-.41*	.34*	.01	.41*	-.05	___									
7. Expressiveness	-.26*	.29*	.04	.29*	-.07	.55*	___								
8. Conflict	.37*	-.29*	-.05	-.41*	.12	-.64*	-.44*	___							
9. Independence	-.44*	.44*	-.02	.16	.14	.40*	.44*	-.36*	___						
10. Control	.25*	-.14	.05	-.11	.12	-.25*	-.60*	.35*	-.41*	___					
11. BID	.62*	-.32*	.10	-.51*	.44*	-.36*	-.27*	.42*	-.28*	.25*	___				
12. S-I dis.	-.52*	. 26*	-.01	.27*	-.41*	.43*	.34*	-.38*	.38*	-.33*	-.74*	___			
13. S-I dis. same sex	-.42*	.21	.00	.17	-.49*	.38*	.32*	-.36*	.28*	-.36*	-.64*	.84*	___		
14. S-I dis. opposite sex	-.46*	.22	-.10	.20	-.48*	.25*	.22*	-.22	.33*	-.28*	-.65*	.73*	.72*	___	
15. Maladaptive eating	.55*	.23*	.07	-.37*	.06	-.24*	-.19	.27*	-.39*	.17	.75*	-.57*	-.39*	-.41*	___

Note: n = 80. All starred correlations (*) are significant at least at p< .05.

As hypothesized, a greater level of peer teasing was found to be positively related to body image disturbance (r = .62; p < .01) and maladaptive eating (r = .55; p < .01). As hypothesized, greater level of peer teasing exhibited a positive correlation with maladaptive coping strategies (r

= .28; $p < .05$). Contrary to what was hypothesized, the negative correlation between greater level of peer teasing and adaptive coping strategies was not significant ($r = -.18$; *ns*). See Table 1.

The second aim of the current study was to assess the interrelationship among peer teasing, psychological characteristics, physical factors, and family environment. The stated hypotheses were partially supported.

As hypothesized, peer teasing indicated a negative correlation with self-esteem ($r = -.52$; $p < .01$) and independent self-construal ($r = -.45$; $p < .01$). Contrary to what was hypothesized, peer teasing was not found to be significantly correlated to physical factors (BMI). Finally, greater levels of peer teasing were found to be negatively correlated to family factors of cohesion ($r = -.41$; $p < .01$), expressiveness ($r = -.26$; $p < .05$), and independence ($r = -.44$; $p < .01$), while positively related to family factors of conflict ($r = .37$; $p < .01$) and control ($r = .25$; $p < .05$).

Hierarchical Multiple Regression Analyses

The third aim of the current study was to explore the relative contributions of peer teasing, psychological characteristics, physical factors, and family environment in the development of body-image disturbance (body-image disturbance, perceived self-image discrepancy, and perceived self-image discrepancy by same sex and opposite sex members). Pearson product moment correlations revealed a relationship between these factors and body-image disturbance, thus the application of multiple regression analyses is warranted. Hierarchical multiple regression analyses were conducted on the data for the total sample.

Body-image disturbance. A hierarchical multiple regression analysis revealed that peer teasing, psychological characteristics, physical factors, and family environment significantly accounted for 61.1% of the variance in body-image disturbance ($R^2 = .611$, $F (10, 69) = 10.85$, $p < .01$). Peer teasing ($\beta = .413$, $t (79) = 4.16$, $p < .01$) and BMI ($\beta = .420$, $t (79) = 5.30$, $p < .01$) were found to be significant positive predictors of body-image disturbance. Self-esteem ($\beta = -.283$, $t (79) = -2.61$, $p < .01$) emerged as a significant negative predictor of body-image disturbance. See Table 2.

Table 2

Summary of Hierarchical Multiple Regression Analyses for Predictors of Body-Image Dissatisfaction

Predictor Variable	R^2	ΔR^2	β	*T*
Step 1				
Peer Teasing	0.38	***0.38***	0.62	**6.89**
Step 2	0.43	0.05		
Peer Teasing			0.50	***4.79***
Self-Esteem			-0.29	***-2.59***
Independent Self-Construal			0.07	0.64
Interdependent Self-Construal			-0.03	-0.33

Step 3	0.59	***0.16***		
Peer Teasing			0.48	***5.33***
Self-Esteem			-0.26	***-2.73***
Independent Self-Construal			0.04	0.44
Interdependent Self-Construal			0.01	0.16
BMI			0.40	**5.39**
Step 4	0.61	0.02		
Peer Teasing			0.42	***4.16***
Self-Esteem			-0.28	***-2.61***
Independent Self-Construal			0.11	1.05
Interdependent Self-Construal			0.04	0.51
BMI			0.42	***5.30***
Cohesion			0.60	0.52
Expressiveness			-0.40	-0.32
Conflict			0.08	0.77
Independence			-0.14	-1.31
Control			-0.02	-0.02

Note: Model summary at final step, F (10, 69) = 10.85, $p < .01$, $R^2 = 0.611$
***p* < .05**

Perceived self-image discrepancy. A hierarchical multiple regression analysis revealed that peer teasing, psychological characteristics, physical factors, and family environment significantly accounted for 51.4% of the variance in perceived self-image discrepancy ($R^2 = .514$, F (10,69) = 7.289, $p < .01$). Peer teasing (β = -.301, t (79) = -2.68, $p < .01$) and BMI (β = -.40, t (79) = -4.51, $p < .01$) were found to be significant negative predictors of self-image discrepancy scores. See Table 3.

Table 3

Summary of Hierarchical Multiple Regression Analyses for Predictors of Self-Image Discrepancy

Predictor Variable	R^2	Δ R^2	β	*T*
Step 1				
Peer Teasing	0.24	***0.24***	-0.49	**-5.00**
Step 2	0.27	0.03		
Peer Teasing			-0.47	***-3.99***
Self-Esteem			-0.01	-0.05
Independent Self-Construal			0.13	1.06
Interdependent Self-Construal			0.14	1.43
Step 3	0.42	***0.14***		
Peer Teasing			-0.45	***-4.18***
Self-Esteem			-0.03	*-0.29*
Independent Self-Construal			0.16	1.42
Interdependent Self-Construal			0.10	1.14
BMI			-0.38	**-4.23**

Step 4	0.51	0.10		
Peer Teasing			-0.30	***-2.68***
Self-Esteem			-0.04	-0.33
Independent Self-Construal			0.02	0.19
Interdependent Self-Construal			0.04	0.41
BMI			-0.40	***-4.51***
Cohesion			0.16	1.26
Expressiveness			0.07	0.57
Conflict			-0.04	-0.34
Independence			0.21	1.76
Control			-0.01	-0.12

Note: Model summary at final step, F (10,69) = 7.289, $p < .01$, $R^2 = 0.514$
Self-image discrepancy scores obtained by subtracting current body size from ideal body size.
***p* < .05**

Perceived self-image discrepancy by peers. A hierarchical multiple regression analysis revealed that peer teasing, psychological characteristics, physical factors, and family environment significantly accounted for 52.4% of the variance in perceived self-image discrepancy by same sex peers ($R^2 = .524$, F (10,69) = 7.592, $p < .01$). Peer teasing ($\beta = -.322$, t (79) = -2.90, $p < .01$) and BMI ($\beta = -.459$, t (79) = -5.24, $p < .01$) were found to be significant negative predictors self-image discrepancy scores by same sex peers. See Table 4.

Table 4

Summary of Hierarchical Multiple Regression Analyses for Predictors of Self-Image Discrepancy by Same Sex Peers

Predictor Variable	R^2	ΔR^2	β	*T*
Step 1				
Peer Teasing	0.19	***0.19***	-0.44	**-4.31**
Step 2	0.22	0.03		
Peer Teasing			-0.46	***-3.78***
Self-Esteem			-0.11	-0.80
Independent Self-Construal			0.15	1.18
Interdependent Self-Construal			0.13	1.28
Step 3	0.44	***0.22***		
Peer Teasing			-0.43	***-4.10***
Self-Esteem			-0.14	-1.24
Independent Self-Construal			0.18	1.70
Interdependent Self-Construal			0.08	0.95
BMI			-0.47	**-5.41**
Step 4	0.52	0.10		
Peer Teasing			-0.32	***-2.90***
Self-Esteem			-0.19	-1.55
Independent Self-Construal			0.11	0.95
Interdependent Self-Construal			0.03	0.38
BMI			-0.46	***-5.24***
Cohesion			0.15	1.19

Expressiveness	0.08	0.66
Conflict	-0.06	-0.51
Independence	0.56	0.46
Control	-0.09	-0.84

Note: Model summary at final step, F (10,69) = 7.592, $p < .01$, $R^2 = 0.524$
Self-image discrepancy scores obtained by subtracting current body size from ideal body size.
***p* < .05**

A hierarchical multiple regression analysis revealed that peer teasing, psychological characteristics, physical factors, and family environment significantly accounted for 45.9% of the variance in perceived self-image discrepancy by opposite sex peers ($R^2 = .459$, F (10,69) = 5.851, $p < .01$). Body-mass index (BMI) (β = -.516, t (79) = -5.52, $p < .01$) was found to be a negative predictor of self-image discrepancy by opposite sex peers. Independent family environment (β = .323, t (79) = 2.56, $p < .01$) emerged as a positive predictor of self-image discrepancy by opposite sex peers. See Table 5.

Table 5

Summary of Hierarchical Multiple Regression Analyses for Predictors of Self-Image Discrepancy by Opposite Sex Peers

Predictor Variable	R^2	Δ R^2	β	*T*
Step 1				
Peer Teasing	0.15	***0.15***	-0.38	**-3.64**
Step 2	0.17	0.02		
Peer Teasing			-0.34	***-2.68***
Self-Esteem			-0.03	-0.18
Independent Self-Construal			0.16	1.21
Interdependent Self-Construal			0.06	0.56
Step 3	0.38	***0.21***		
Peer Teasing			-0.31	***-2.82***
Self-Esteem			-0.06	-0.50
Independent Self-Construal			0.19	1.69
Interdependent Self-Construal			0.01	0.13
BMI			-0.47	**-5.06**
Step 4	0.46	0.08		
Peer Teasing			-0.16	-1.38
Self-Esteem			0.01	0.10
Independent Self-Construal			0.04	0.31
Interdependent Self-Construal			-0.04	-0.39
BMI			-0.52	***-5.52***
Cohesion			0.07	0.54
Expressiveness			0.01	0.09
Conflict			0.03	0.20
Independence			0.32	***2.56***
Control			-0.01	-0.01

Note: Model summary at final step, F (10,69) = 5.851, $p < .01$, $R^2 = 0.459$
Self-image discrepancy scores obtained by subtracting current body size from ideal body size.
***p* < .05**

The fourth aim of the current study was to explore the relative contributions of peer teasing, psychological characteristics, physical factors, and family environment on the development of maladaptive eating. Multiple regression analysis indicated that these variables significantly accounted for 37.2% of the variance in body-image disturbance (R^2 = .372, F (10, 69) = 4.09, p < .01). Both peer teasing (β = .433, t (79) = 3.39, p < .01) and independent family environment (β = -.314, t (79) = -2.31, p < .05) acted as significant positive and negative predictors respectively. See Table 6.

Table 6

Summary of Hierarchical Multiple Regression Analyses for Predictors of Maladaptive Eating

Predictor Variable	R^2	Δ R^2	β	*T*
Step 1				
Peer Teasing	0.30	***0.30***	0.55	**5.82**
Step 2	0.32	0.02		
Peer Teasing			0.53	***4.60***
Self-Esteem			-0.15	-1.29
Independent Self-Construal			0.12	0.99
Interdependent Self-Construal			-0.04	-0.37
Step 3	0.32	*0.00*		
Peer Teasing			0.52	***4.55***
Self-Esteem			-0.06	-0.50
Independent Self-Construal			0.10	0.88
Interdependent Self-Construal			-0.03	-0.34
BMI			0.03	**0.27**
Step 4	0.37	0.05		
Peer Teasing			0.43	***3.39***
Self-Esteem			-0.25	-1.81
Independent Self-Construal			0.23	1.73
Interdependent Self-Construal			-0.01	0.08
BMI			0.08	0.80
Cohesion			0.10	0.70
Expressiveness			0.01	0.04
Conflict			0.01	0.08
Independence			-0.31	***-2.31***
Control			-0.05	-0.41

Note: Model summary at final step, F (10,69) = 4.09, p < .01, R^2= 0.372
***p* < .05**

CONCLUSION

A major goal of this study was to evaluate the role of peer teasing, psychological characteristics, physical factors and family environment in the development of body image disturbance and maladaptive eating problems. Past research on these topics has focused primarily on individual or family factors while minimizing the impact of peer teasing

experiences in earlier years on the psychological well-being of young women in later years. The stated hypotheses were partially supported and subsequently discussed.

Body-Image Disturbance

The first aim of the current study was to investigate the interrelationship pattern among peer factors, psychological characteristics (self-esteem and self-construal), physical factors (BMI) and family environment (cohesive, cohesion, expressiveness, conflict, independence, and control) in the development of body-image disturbance. The stated hypotheses were partially supported with peer teasing indicating a positive relationship with body-image disturbance and family factors of conflict and control. Peer teasing was negatively related to self-esteem, independent self-construal, and specific family factors such as cohesion, expressiveness, and independence. The strength of these relationships indicate that peer teasing is an important variable worthy of further scrutiny in terms of its role in predicting level of body-image disturbance.

Multiple regression analysis data provided partial support to the second hypothesis. BMI and peer teasing were found to be significant positive predictors of body image disturbance. Total self-esteem emerged as a significant negative predictor of body-image disturbance.

The fact that BMI emerged as a significant predictor of body-image disturbance was not surprising and is consistent with a large body of previous research (Jones, 2004; Paxton, Eisenberg, & Neumark-Sztainer, 2006). More importantly, peer teasing emerged as a significant predictor of body-image disturbance. Peer teasing experiences have a negative impact on young women and affect their feelings about their bodies. The current finding, in addition to previous research (Grilo & Masheb, 2005; Neumark-Sztainer et al., 2002; Rideout & Ray, 2005), provides support for the influential role that peers play in the development of body-image disturbance in young women. Peer teasing experiences place women at risk for body-image disturbance and greater self-image discrepancy – for self, same sex, and opposite sex peers. Greater self-image discrepancy means that the difference between a woman's current estimate of body size and ideal estimate of body size is greater. Some women may prefer to be two or three body sizes smaller, indicating feelings of extreme body dissatisfaction (see Rideout & Ray, 2005; Strauman et al., 1991).

The role of peer acceptance in adolescence is found to be significant (Brown, 1986). For women, peers are especially important given that young girls are socialized to value relationships and remain connected, to care for others, and to look outside of the self for approval (Gilligan, 1982). While positive peer relations can lead to healthy self-development in girls, negative peer relationships can leave women vulnerable during this fragile stage of development. In essence, peer teasing communicates clear messages of peer rejection and disapproval. In light of these circumstances, these young women may feel that their bodies are the source of the problem and the reason for their rejected status.

It is not surprising that young women who experience peer teasing are at risk for the development of negative self-perception. Peer groups send powerful messages regarding ideal body size and norms regarding attractiveness. Wang and colleagues (2006) revealed that popularity was associated with smaller body size, while others found that friendship attitudes

regarding dieting significantly predicted body-image and eating patterns (Paxton et al., 1999). Furthermore, girls are negatively affected by the media's portrayal of extremely thin beauty ideals (Dohnt & Tiggemann, 2006; see also Garner et al., 1980). Beauty standards created in the media are reinforced by peer groups and further internalized by young women, thereby increasing body dissatisfaction.

Physical factors (BMI) that influence the development of body-image disturbance and self-image discrepancy are difficult to target through intervention and prevention programs as they are largely a combination of genetic and environmental influences. It is extremely crucial to examine the risk factors of body image disturbance which significantly contribute towards the development of eating disorders in young women. This investigation calls for the need to intervene on the level of peers as teasing experiences clearly place women at risk for negative perceptions about their bodies. Young girls are teased by their peer groups within their school environment, and yet, school systems have consistently diminished the role of daily peer teasing experiences as a potential risk factor in the development of body-image disturbance. While many schools focus on prevention programs to address physical aggression or bullying by peers, the majority ignore the subtle undercurrent of teasing and rejection. This research highlights the importance of prevention and intervention programs to provide adequate support to students, teachers, parents, and administrators alike.

Maladaptive Eating

One aim of this study was to study the interrelationship pattern among peer factors, psychological characteristics, physical factors, and family environment and maladaptive eating. The hypotheses were partially supported as peer teasing was positively associated with greater maladaptive eating scores. Consistent with previous research (Neumark-Sztainer et al., 2003; Wertheim et al., 2001), a strong positive relationship was noted between body-image dissatisfaction and maladaptive eating. If body-image dissatisfaction is conceptualized as internal feelings, then maladaptive eating habits are the behavioral manifestation of these feelings. Once women begin engaging in these maladaptive eating habits, they are one step closer to meeting diagnostic criteria of an eating disorder (Stice & Whitenton, 2002).

The stated hypothesis concerning the relative contribution of peer, psychological, physical, and family factors on the development of maladaptive eating patterns was partially supported. Peer teasing emerged as the only significant positive predictor of maladaptive eating while independent family environment emerged as a negative predictor of maladaptive eating. These results reveal that peer teasing plays an important role in both the internal feelings of body-image disturbance and the behavioral manifestation of those negative feelings.

The negative impact of peer teasing facilitates the adoption of maladaptive eating patterns. This indicates the selection of a negative behavioral coping strategy in dealing with these stressors. These dangerous habits place women at greater risk for the development of clinically-significant eating pathology. By the time a disorder is diagnosed and targeted for treatment, the rate of recovery is low while the risk of relapse is high. Prevention programs should be targeted before young women engage in these dangerous eating habits. Jones (2004) suggests expanding the scope of these prevention programs to include consideration of peer

groups as the potential source of social comparison. The current research indicates the relevance of evaluating pressure and its impact on children and adolescents in the school environment.

Furthermore, the current findings can be better understood through Bronfenbrenner's ecological theory (1979) which emphasizes that children and adolescents develop by interacting in a variety of contexts including the school environment, suggesting that intervening on this level within the "microsystem" is both appropriate and necessary. Furthermore, Gilligan's (1982) model is more relevant while designing intervention and/or prevention programs for girls at school. The importance of connection and same sex peer modeling will be more effective to address body related issues, the influence of peers, and eating problems among young girls. More specifically, prevention programs at school are extremely crucial to address issues of body-image disturbance before it's progression towards clinical symptomatology of eating disorders.

Overall, the results of this study suggest that peer factors (teasing), psychological characteristics (self-esteem, independent self-construal), physical factors (BMI), and family environment (independence) significantly predict body-image disturbance and eating problems in a sample of young adult women. These results lend support to considering the role of peer factors in the development of an understanding of negative health risk factors and complex dynamics of such eating problems in young women.

Limitations & Implications

There are several limitations that need to be acknowledged for how they might have influenced the current findings. First, it is important to acknowledge the sample size as a potential limiting factor with respect to generalizability. The sample is further limited by not including men or diverse ethnic groups and should be addressed in future research. Current participants were investigated using a retrospective design; a longitudinal study evaluating adolescents from early years into adulthood would provide further support regarding the long-term effects of early peer teasing experiences.

Second, the use of self-report measures could limit the findings in this study as both accuracy and social desirability are possible caveats with self-report research. While participants were ensured that their experiences would be kept confidential, it is possible that these factors still exerted an influence. Furthermore, teasing experiences were not corroborated by outside sources such as other peers, teachers, or parents. Future research would benefit from adopting multi-method assessment measures.

The primary implication of this study relates to the importance of the role of peers in the development of body-image disturbance and eating problems among young women. Current literature has not yet sufficiently acknowledged the multi-dimensional risk and protective factors such as peers' contribution towards health risk areas among adolescents. Further research is necessary for widespread dissemination of the results. Given the association between early teasing experiences and subsequent body-image issues and eating problems, creating and implementing prevention programs within the school environment is crucial to protect young girls from developing eating disorders. Peers, educators, administrators, and parents need to be informed of the potential impact of teasing regardless of intent. Clinicians working with schools,

the community, and children need to consider how to move beyond consideration of just overt bullying behavior to the impact of more subtle forms of peer rejection.

The discussion of peer teasing and its role in the development of body-image disturbance and eating problems should not be limited to females. Jones (2004) revealed that changes in body dissatisfaction over time among boys were influenced by internalization of ideal male body types emphasizing muscularity. Further research regarding peer appearance culture among adolescent boys is needed to further understand the developmental pathway of their body-image issues. This seems critical given the rising prevalence of eating disorders among males. In line with this discussion, further inquiry into how the gender of the teaser (same sex vs. opposite sex) affects body-image outcomes is needed. Gender-specific ideals regarding beauty and emotional reactions based on the gender of the teaser would help to inform the development of school-based prevention programs for males and females alike.

In conclusion, this study recommends more in-depth inquiry into the role of peers, psychological characteristics, physical factors, and family environment as predictors of body-image disturbance and eating problems. Future research with young women will allow clinicians, researchers, and educators to gain a clear understanding of the complex pathways of eating problems and implement age-appropriate prevention programs at school.

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