Longitudinal Examination of Maternal Psychological Control and Adolescents' Self-Competence as Predictors of Bulimic Symptoms among Boys and Girls

Elizabeth H. Blodgett Salafia, PhD[1,2]*
Dawn M. Gondoli, PhD[1]
Alexandra F. Corning, PhD[1]
Michaela M. Bucchianeri, MA[1]
Nicole M. Godinez, BA[1]

ABSTRACT

Objective: Because bulimia nervosa is a problem among adolescents, it remains essential to examine its precursors. The specific etiologic chain investigated in this study is such that maternal psychological control first leads to adolescents' lowered self-competence, which in turn predicts bulimic symptoms.

Method: Self-report data were collected from 58 boys and 73 girls during sixth, seventh, and eighth grades. Participants reported on maternal psychological control, self-competence, and bulimic symptoms.

Results: Using structural equation modeling, we tested our hypothesized longitudinal indirect effects model separately for boys and girls. Results indeed indicated that high maternal psychological control in sixth grade led to lowered adolescents' self-competence in seventh grade, which in turn predicted increased bulimic symptoms in eighth grade for both boys and girls.

Discussion: This study uncovers one particular process wherein a psychologically controlling parenting style affects adolescents' development of bulimic symptoms, a finding that may be useful to researchers and clinicians. © 2008 by Wiley Periodicals, Inc.

Keywords: bulimia nervosa; psychological control; self-competence; adolescence; boys and girls

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Introduction

Given the prevalence of both clinical and subclinical symptoms of bulimia nervosa among male and female adolescents,[1,2] it is essential to understand the mechanisms that underlie such symptomatology. One potent, longitudinal risk factor associated with adolescents' development of bulimia nervosa is a poor parenting style, which may include low care and support as well as high conflict and pressure.[3,4] In particular, parental autonomy-constraining behaviors (e.g., criticism, overprotection, and control) have been linked with adolescents' symptomatology.[3,5,6] Such parental behaviors can interfere with adolescents' ability to regulate emotions and behaviors, thereby increasing disturbances of the self and vulnerability to bulimia nervosa (e.g., Refs. 7–9). Consistent with this view, we test a specific indirect effects model in which parental psychological control leads to adolescents' lowered self-competence, which in turn leads to bulimic symptoms among both boys and girls.

Parental psychological control refers to negative, covert control that undermines the development of adolescents' age-appropriate autonomy.[10] Psychologically controlling parents often use guilt- and anxiety-induction when adolescents express thoughts or behaviors reflecting individuation from parents.[11] As a result, psychological control undermines adolescents' beliefs that they can self-regulate and act competently without their parents[10] and may lead to a generalized perception of low self-competence.

Self-competence is defined as the belief that one is capable and effective.[12] In contrast to global self-esteem, which appears to be relatively consistent, self-competence may vary across domains of functioning such as social, academic, athletic, and self-regulatory domains.[13–15] Adolescents' construction of self-competence involves social comparison

processes and evaluations from significant others, including parents.[13,14,16] Such negative evaluations may be characterized by overt, specific feedback or may reflect a more covert, generalized undermining of adolescents' bids for independent functioning.[14] Negative parental evaluations may thus contribute to adolescents' negative self-appraisal.[16]

Emerging research has suggested that psychologically constraining parenting may in fact diminish adolescents' perceived self-competence (e.g., Refs. 17, 18). For instance, a lack of autonomy support from parents was associated with lowered self-competence among boys and girls in third through sixth grades.[19] In addition, low parental reciprocity, defined as a lack of mutuality in the parent-adolescent relationship, predicted a heightened sense of personal incompetence among college-aged women.[20] While such findings are consistent with long-standing theories of the development of bulimia nervosa (e.g., Refs. 5, 6), more attention to the early adolescent period is warranted. A key developmental task for young adolescents is to become more psychologically independent from parents while maintaining a supportive attachment.[21] Additionally, early adolescence is a vulnerable period for the development of body dissatisfaction and dieting behaviors, both of which are precursors to bulimia nervosa.[22,23] We hypothesize that psychologically controlling parenting during early adolescence may potentiate a pathway in which diminished self-competence leads to bulimic symptoms (see also Refs. 5, 6, 20).

Indeed, negative self-evaluations are a central component of the development and maintenance of bulimic symptoms (e.g., Refs. 24, 25). In particular, adolescents with negative self-perceptions may be preoccupied with body image, as physical appearance provides a representation of personal value, self-worth, and attainment of others' attention and praise. This preoccupation with body image, in turn, can elevate adolescents' risk of developing bulimia nervosa (see Ref. 9 for a review). Further, adolescents with poor self-perceptions may be more likely to endorse culturally prescribed ideals of thinness and more vulnerable to social pressures to be thin; thus, these individuals tend to develop symptoms of bulimia nervosa (e.g., Refs. 23, 26).

Empirical work has established a link between self-competence and bulimic symptoms among females. For example, low social competence among college-aged women was linked with the presence of bulimic symptoms.[20,27,28] Further, in a set of two longitudinal studies of college-aged women, low perceived self-competence was correlated with increased bulimic symptomatology and predicted changes in bulimic symptomatology over time.[29] Of particular relevance to the present study, 12- to 14-year-old female adolescents with eating disorders reported significantly lower ratings of self-competence than did a same-age control group without eating disorders.[30] All of these findings, however, pertain only to females; little attention has been given to the connection between self-competence and bulimic symptoms among males. Additionally, prior work generally has focused on middle or late adolescence, and thus it is important to test the replicability of these findings with younger adolescents.

Despite the established connections between parental psychological control and adolescents' self-competence as well as between competence and bulimic symptoms, we know of no studies that test the longitudinal connections among all three constructs. Thus, the purpose of the present study is to test the hypothesis that high maternal psychological control in sixth grade leads to adolescents' lowered self-competence in seventh grade, which in turn predicts increased bulimic symptoms in eighth grade. In addition, this study provides a rigorous longitudinal examination of a particular time-ordered effects model by controlling for prior bulimic symptomatology. Finally, we seek to investigate the applicability of this model for both sexes, and therefore we perform separate analyses of this model for boys as well as girls.

Method

Participants

The data for the present study were collected as part of a longitudinal project reviewed and approved by the university's Institutional Review Board. Our sample included 58 boys and 73 girls from a medium-sized city in the Midwest. Initial recruitment of boys and girls occurred by distributing letters through the mail to parents of fourth-graders. These letters briefly described the project and instructed mothers to call our research office if interested in participating. Mother–child dyads were eligible if the fourth-grader was the oldest child in the family (i.e., all families were making this transition for the first time in their ontogeny) and if the mother was currently married to the fourth-grader's father and had never been divorced. In addition, for the present study, dyads were eligible only if the mother had remained married during the study period, as disrupted parenting is common during marital transitions.[31]

Data used in the present study were collected during sixth, seventh, and eighth grades. At the sixth-grade

assessment, boys and girls were between the ages of 11 and 13 years ($M = 11.65$, SD $= 0.51$). Most of the sample identified themselves as European American (95%), and families tended to be educated and upper-middle class. In particular, mothers had completed an average of 3 years of education after receiving their high school diplomas, and 80% worked full- or part-time outside the home. The average annual household income per family was $93,614 (SD $= 68,491$). At the sixth-grade assessment, mothers had been married for an average of 15.5 years (SD $= 3.74$), and their families had an average of 2.5 children (SD $= 0.96$).

Procedure

Once annually, mothers and adolescents visited a university research laboratory for ~2 h. All mothers and adolescents separately completed consent and assent forms and self-report questionnaires. Because of the nature of the present study, we used only information obtained from adolescents' self-reports. For compensation, the mother-adolescent dyads were paid $30.00 in the first year of the study, and this rate increased by $10.00 increments each year such that in the fifth year of the study (e.g., when the adolescent was in eighth grade), each dyad received $70.00.

Measures

Maternal Psychological Control. Adolescents' perceptions of maternal psychological control were assessed with the eight-item Psychological Control Scale-Youth Self-Report (PCS-YSR; Ref. 10). The PCS-YSR assesses the extent to which adolescents perceive their mothers as psychologically controlling through the use of behaviors that attempt to manipulate thoughts, self-expression, feelings, and maternal attachment. These behaviors may include guilt-induction, anxiety-induction, and the withdrawal of love.[10] Specific items include, "My mom brings up my past mistakes when she criticizes me" and "My mom will avoid looking at me if I have disappointed her." Responses were scored on a five-point scale ranging from 0 (*never*) to 4 (*always*) such that higher scores indicated greater perceived maternal psychological control.

Evidence of construct validity for the PCS-YSR is demonstrated by its expected relations with the Acceptance subscale of the Child Report of Parental Behavior Inventory,[32] which assesses parental acceptance versus rejection of the adolescent ($r = .24$) (see Ref. 33), and the Knowledge Scale,[34] which measures parental knowledge about adolescents' activities, whereabouts, and acquaintances ($r = -.25$ for maternal reports and $r = -.33$ for adolescent reports) (see Ref. 35). Internal consistency has been estimated at 0.81 in a sample of boys and girls in fifth grade (see Ref. 10). In the present study, for both boys and girls, internal consistency was 0.79 in sixth grade.

Adolescents' Self-Competence. Adolescents' self-competence was measured using the 30-item Self-Perception Profile for Children (SPPC; Ref. 36). This scale assesses adolescents' perceptions of their own competencies in five domains: academic, athletic, social, appearance, and behavioral conduct. Responding to each item is a two-step process. First, adolescents indicate whether they are more similar to adolescents who are competent or more similar to others who are not (e.g., "Some kids find it hard to make friends but other kids find it's easy to make friends" and "Some kids behave themselves very well but other kids often find it hard to behave themselves"). Second, adolescents indicate whether the statement they had chosen was "really like me" or "sort of like me." Items were scored on a four-point rating scale such that higher scores indicated greater competence.

Construct validity of the SPPC is evidenced by its significant relations in the expected directions with the Trait Anxiety Scale of the State-Trait Anxiety Inventory for Children,[37] which measures chronic symptoms of anxiety ($r = -.56$), and with both the Externalizing and Internalizing subscales of the Child Behavior Checklist,[38] which measure behavioral and emotional problems, respectively ($r = -.30$ and $r = -.22$) (for all, see Ref. 39). For 11-year-old boys and girls, internal consistency of the entire SPCC has been estimated at 0.80 (see Ref. 39). In the present study, internal consistency was 0.88 for boys and 0.90 for girls in seventh grade.

Adolescents' Bulimic Symptoms. The seven-item Bulimia subscale of the Eating Disorder Inventory (EDI; Ref. 40) was used to assess the tendency toward bingeing and purging behaviors. Items measure inclinations towards emotional eating, secretive eating, uncontrollable bingeing, and obsessions with food. Sample items include, "I stuff myself with food" and "I have thought of trying to vomit in order to lose weight." Because the original method of scoring (e.g., 0, 0, 0, 1, 2, 3) suggested by Garner and colleagues[40] restricts the range of responses, we coded responses on a continuous six-point scale (see Ref. 41). Thus, in response to each item, adolescents indicate how frequently they participate in the specified behavior using a six-point scale ranging from 0 (*never*) to 5 (*always*). Higher scores indicated greater bulimic symptoms.

Construct validity of the Bulimia subscale of the EDI is evidenced by its positive relation with the EDI's Body Dissatisfaction subscale ($r = .40$) and the Drive for Thinness subscale ($r = .36$) (for both, see Ref. 42). Relations have also been found between the Bulimia subscale and other weight- and body image-related measures, such as the Physical Appearance Comparison Subscale[42] ($r = .37$) (see Ref. 43) and the Restraint Scale[44] ($r = .47$) (see Ref. 45). The Bulimia subscale has demonstrated evidence of internal consistency among 11- to 18-year-old adolescent boys ($\alpha = 0.63$) and girls ($\alpha = 0.69$) (see Ref. 46). Internal

TABLE 1. Means, standard deviations, and intercorrelations of study variables

Variable	1	2	3	4	Boys Mean	Boys SD	Girls Mean	Girls SD
1. Maternal psychological control in sixth grade	—	−0.27*	0.39*	0.07	4.67	3.71	4.85	3.89
2. Adolescents' self-competence in seventh grade	−0.41*	—	−0.37*	−0.45*	98.28	11.30	96.19	12.29
3. Adolescents' bulimic symptoms in sixth grade	0.40*	−0.15	—	0.51*	3.66	3.09	3.75	3.68
4. Adolescents' bulimic symptoms in eighth grade	0.20**	−0.26*	0.39*	—	3.33	3.26	5.27	4.16

Correlations using boys' reports appear above the diagonal (of the second, third, and fourth column), and correlations using girls' reports appear below the diagonal.

*p < .05; **p < .10.

FIGURE 1. Hypothesized indirect effects model of maternal psychological control, adolescents' self-competence, and adolescents' bulimic symptoms for boys. *p < .05; **p < .10.
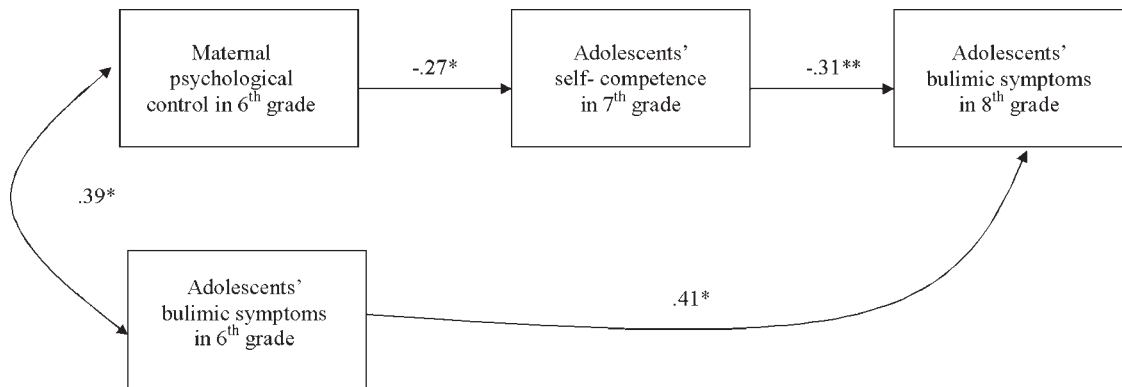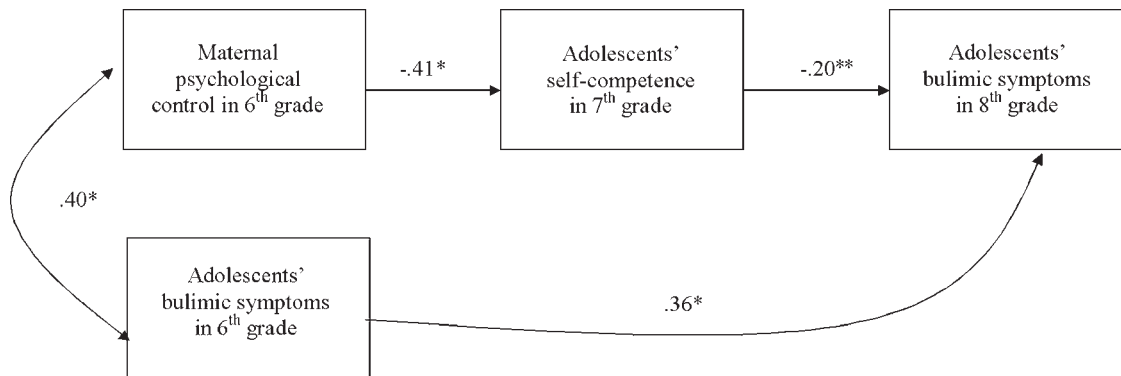

FIGURE 2. Hypothesized indirect effects model of maternal psychological control, adolescents' self-competence, and adolescents' bulimic symptoms for girls. *p < .05; **p < .10.

consistency of the subscale in the present study was estimated at 0.75 for boys and 0.77 for girls in sixth grade. In eighth grade, internal consistency was 0.71 for boys and 0.75 for girls.

Results

Descriptive Statistics

All means, standard deviations, and intercorrelations for the study variables are reported separately for boys and girls in **Table 1**. As depicted, correlations between the model variables were strong, statistically significant, and in the expected directions, providing initial support for our hypothesized models for both boys and girls.

Model Testing

The process of model testing included examination of our hypothesized indirect effects model such that maternal psychological control in sixth grade predicted adolescents' lowered self-competence in seventh grade, which in turn predicted

bulimic symptoms in eighth grade. Separate models were tested for boys and girls. In addition, each model controlled for prior levels of bulimic symptoms in sixth grade. The Mplus 4.0 program was used to estimate relations among the study variables.[47]

Hypothesized Indirect Effects Model for Boys. We first examined our hypothesized model using adolescent boys' reports (see **Fig. 1**; $\chi^2(2, N = 58) = 8.30$, $p = .015$; CFI = 0.80; RMSEA = 0.23). Results indicated that all path coefficients for the indirect effects were significant and in the expected directions. This suggests that high maternal psychological control in sixth grade led to adolescents' lowered self-competence in seventh grade ($\gamma = -0.27$), which in turn predicted increased bulimic symptoms in eighth grade ($\gamma = -0.31$). It is important to note that this pattern of indirect effects existed while controlling for boys' prior bulimic symptoms in sixth grade.

Hypothesized Indirect Effects Model for Girls. Next, we tested our hypothesized model using adolescent girls' reports (see **Fig. 2**; $\chi^2(2, N = 73) = 0.12$, $p = .94$; CFI = 1.00; RMSEA < 0.001). Results indicated that all path coefficients for the indirect effects were significant and in the expected directions. This suggests that high maternal psychological control in sixth grade led to adolescents' lowered self-competence in seventh grade ($\gamma = -0.41$), which in turn predicted increased bulimic symptoms in eighth grade ($\gamma = -0.20$). Furthermore, as seen with boys' reports, this pattern of indirect effects existed while controlling for girls' prior bulimic symptoms in sixth grade.

Discussion

In the present study, we hypothesized that maternal psychological control in sixth grade would lead to adolescents' lowered self-competence in seventh grade, which in turn would predict bulimic symptoms in eighth grade. Examining self-reports separately for each sex, we found support for this hypothesized indirect effects model for both boys and girls. To our knowledge, this study is the first to investigate the associations between all three variables longitudinally during early adolescence.

To begin, we found that high maternal psychological control in sixth grade led to lowered self-competence among adolescents in seventh grade. Empirical research generally supports this notion that a psychologically constraining parenting style may result in adolescents' feelings of diminished

self-competence (e.g., Refs. 17–20), and our findings are consistent with these conclusions. Psychological control restricts adolescents' autonomy and hinders their ability to self-regulate and act competently without parents.[10] This leads to an internalized lack of self-competence, and adolescents may look for personal or body-related ways to be able to experience a sense of independence and self-competence. Such an adolescent may have difficulty regulating impulses to binge and purge.[48]

Indeed, we found that lowered self-competence in seventh grade predicted adolescents' increased bulimic symptoms in eighth grade. This finding coincides with other empirical work that has linked low self-competence with bulimic symptoms (e.g., Refs. 20, 27–30). A lack of self-competence is central to the development of bulimia nervosa as adolescents who perceive themselves as incompetent tend to be preoccupied with body image, subscribe to culturally prescribed ideals of thinness, and become vulnerable to social pressures to be thin (e.g., Refs. 9, 24–26). As a result, they are likely to engage in extreme weight loss strategies including bingeing and purging behaviors associated with bulimia nervosa.

Some limitations of our data should be noted. First, our sample consisted of primarily European American adolescents from maritally intact, upper-middle class families. Greater ethnic and socioeconomic diversity within the sample would allow broader generalizations of our findings, although research generally suggests that adolescents demographically similar to those within our sample are at high risk for developing bulimia nervosa.[49] Second, this study did not include adolescents' perceptions about fathers, which may have been especially useful in analyzing boys' data given boys' tendency to perceive pressure from their fathers to lose weight.[50] Nevertheless, this study's conclusions remain especially relevant for girls who indicate that mothers are more influential than fathers in communicating weight-loss messages to them.[50] Lastly, consistent with prior research (e.g., Refs. 42–45), we used a self-report measure to assess bulimic symptoms. Self-reports could certainly be supplemented with clinical interviews to more accurately reflect level of symptomatology. However, based on the prevalence of subclinical bulimic symptoms in the United States and given that the onset of bulimia nervosa typically does not occur until late adolescence, the symptoms self-reported by our community sample appear to be commensurate with national base rates.[51] Additionally, research has indicated that scores on the Bulimia subscale of the EDI, the measure used in the present study, are

related to clinicians' assessments of bulimic characteristics in individual patients ($r = .57$) (see Ref. 40).

In this study, we chose to examine one particular model with maternal psychological control driving the process leading to adolescents' bulimic symptoms by first affecting their level of self-competence. There are certainly other parenting behaviors that may drive the process proposed by our model. For instance, females with bulimia nervosa often report low parental care and affection, high parental criticism and overprotection, and frequent conflict with parents.[3,52,53] It is possible that these parenting behaviors may also be associated with lowered self-competence, which in turn leads to bulimic symptoms.

Despite possible limitations, the present study makes several contributions. First, in contrast to prior research that has examined the separate associations between maternal psychological control and adolescents' self-competence as well as between competence and bulimic symptoms, in this study, all three variables were tested together and longitudinally. Thus, we offer a particular time-ordered framework to understand how maternal psychological control and adolescents' self-competence work together to predict later bulimic symptoms. It is important to note that we used a stringent method for assessing our model by controlling for prior levels of bulimic symptoms. This enabled us to predict *increases* in symptomatology and truly evaluate temporal precedence of the three variables (see Ref. 9).

Second, this study considered how maternal psychological control and low self-competence affected *both* boys and girls. Previous studies have primarily focused on predictors of females' bulimic symptoms (e.g., Refs. 20, 27–30). However, male adolescents do indeed suffer from bulimia nervosa, and the medical presentation and complications surrounding this disease are similar in males and females (see Ref. 54 for a review). Therefore, empirical work should be focused on males as well as females.

A third contribution of this study is its focus on the relatively understudied period of early adolescence. Despite notions that young adolescents have heightened vulnerability for the development of body dissatisfaction, dieting behaviors, and eating disorders,[20] most studies that examine the predictors of such disordered eating behaviors have focused exclusively on older adolescents or emerging adults (e.g., Refs. 20, 27–29). We encourage a focus of empirical attention on early adolescence, as studies of this period are rare and yet such work is necessary for further understanding of the risk factors associated with bulimia nervosa.

In this study, adolescents' self-competence served as an indirect link between maternal psychological control and bulimic symptoms. In particular, a psychologically controlling parenting style hinders adolescents' autonomy and self-regulation, leading to lowered competence and an increased vulnerability to eating disturbances such as bulimia nervosa. Uncovering and attending to this particular process may be beneficial. Clinicians working with parents can help shed light on and address family dynamics that may hinder the young adolescent's healthy development of self-competence. Parenting workshops can emphasize the adolescent's normative developmental trajectory toward autonomy and the benefits of developing self-regulation capacities as well as assist parents in finding ways to extend parental guidance without using psychological control.

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