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MATERNAL INFLUENCES IN THE DEVELOPMENT OF ADOLESCENT  
DISORDERED EATING AT AGE FIFTEEN

JACQUELYN S. MCWILLIAMS

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Reviewed and approved by the following:

Lori A. Francis  
Assistant Professor of Biobehavioral Health  
and Center for Family Research in Diverse Contexts  
Thesis Supervisor

Daniel L. Trevino  
Senior Lecturer in Biobehavioral Health  
Honors Adviser

Michele Stine  
Instructor of Biobehavioral Health  
Faculty Reader

\*Signatures are on file in the Schreyer Honors College

## ABSTRACT

The goal of this study was to examine if maternal monitoring, maternal warmth/support, and maternal hostility increases the outcome of oral control, dieting, and bulimia independently in adolescents at the age of 15. A total of 490 15-year old adolescents and their mothers answered questionnaires regarding parental supervision, getting along with their parents, and overall eating attitudes. Using a linear regression, maternal supervision and hostility were shown to increase the occurrence of bulimia in adolescents; while maternal warmth and support increased the occurrence of oral control. There was no correlation of the mother's influence on the outcome of dieting in the children. It also appeared that children reported higher levels of parental monitoring in comparison to their mothers, which was related to a higher relationship in the development of bulimia and dieting behaviors in adolescents, but not oral control.

*Keywords:* Maternal supervision, maternal warmth/support, maternal hostility, oral control, dieting, and bulimia

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## Maternal Influences in the Development of Adolescent Disordered Eating at Age Fifteen

In recent years people have been made aware of the rates of unhealthy weight conditions and eating patterns found within the United States; specifically eating behaviors and diet plans used to control weight (Brannon & Fleist, 2010). Adults are commonly thought of as engaging in dieting and weight control; however, in 2007 60% of high school girls were trying to lose weight in comparison to only 38% of female adults in 2004 (Brannon & Fleist, 2010). Disordered eating behaviors are broadly defined as disturbances related to excessive weight preoccupation or management which many include: attitudes about weight and body shape, purging, laxatives, diuretics, binge eating, fasting, excessive exercise, and in severe cases may lead to anorexia or bulimia (Body Image and Disordered Eating, n.d.). These are the behaviors that could possibly lead to eating disorders, but these two concepts should not be confused. An eating disorder is an eating behavior that is clinically diagnosed and causes unhealthy consequences, whereas disordered eating involves specific behaviors and beliefs associated with weight and food (Brannon & Fleist, 2010). These behaviors have the stereotype of being a problem associated with college aged white women; however, many studies have shown the occurrence of disordered eating patterns more commonly in adolescence, beginning as early as elementary school (Brannon & Fleist, 2010). A study of 200 elementary students has shown 55% of girls and 35% of boys approximately nine years old are unhappy about their current weight. (Littleton & Ollendick, 2003). The prevalence of body dissatisfaction and distortion has shown to be more common in females and increase in intensity as the individual ages; as seen in a study of 700 high school students, where 81% of females felt fat compared to 26% of males (Littleton & Ollendick, 2003).

What is it then that makes a large proportion of the adolescent population engage in disordered eating? Findings from research suggest ethnicity, socioeconomic status, personality disturbances (psychopathological traits), early menarche, low self-esteem, high body dissatisfaction, exposure to unrealistic media images, peer pressure, and familial influences as common factors which influence individuals to engage in disordered eating behaviors (Body Image and Disordered Eating, n.d.). Among all the risk factors listed, the average reader may assume these factors are capable of equally influencing people of all ages; therefore, why is it that older adolescents (roughly 13-16) are most likely to engage in disordered eating behaviors? One specific risk factor has been researched and shown to have a substantial effect on the development of disordered eating, especially among females: the mother and daughter relationship. Examining family dynamics, especially the interaction of immediate family members, is a reliable source for discovering characteristics of an individual that may develop into disordered eating behaviors. However, there is something about the mother-daughter interaction that increases the rate of disordered eating behaviors specifically among female adolescents. In order to best examine the effects of maternal influences on the development of adolescent disordered eating patterns, data has been organized according to different maternal and adolescent factors. Factors to be examined regarding the mother and daughter include: maternal mental and physical health history, the rate of supervision and monitoring by mothers, and the overall relationship of the mother and daughter. This information will provide data to assist the understanding of how maternal influences may be specifically related to the increased disordered eating patterns of females approximately fifteen years of age.

A longitudinal study by May, Kim, McHale, and Crouter (2006) examined the influences on children's weight-related behavior from ages 11 to 18 in a non-clinical population. This study

focuses on understanding the mothers' and fathers' conflict, intimacy, and overall knowledge of daily experiences with their adolescent. Three hundred and ninety one eighth, ninth, and tenth graders from 13 school districts in northeast United States and 197 families allowed the researchers to compile a sample population to begin their research. One measure used by researchers included the Stanford Weight Concerns Scale which asked question such as level of fear for gaining weight. Height and weight was measured for body mass index categorization, conflict between parent and adolescent was measured using a variation of the Smetana questionnaire, which presented common conflict areas, such as chores, and the amount of conflict that occurs with their parent (May, Kim, McHale, & Crouter, 2006). To determine intimacy levels between the parent and their children, questions were asked such as if the parents accept their children, and the level of the parents' knowledge of their children's activities. This was measured by asking telephone interview questions to each subject and later comparing the answers in order to find correlation. This study observed a pattern of increasing weight concern until approximately age 16 in girls, and then showed a slight decline in concern. Boys showed a higher level at age 11 and declined as they aged. Even though the girls showed a slight decrease around age 16, their levels of weight concern were still higher than the average male concern. Mother-daughter relationship quality showed that 70% of mothers roughly knew what was going on daily in their child's life which resulted in the adolescents showing a lower concern for weight (May, et al., 2006). The article mentions how this factor could be seen as preventative or causal depending on if the child sees the knowledge as supportive or intrusive and controlling (May, et al., 2006). Conversely, overall influence of the mothers' intimacy, knowledge, and conflict had no effect on the sons' weight related behaviors, but significantly impacted the girls weight related behaviors. Several limitations are found within this study, such as the size of the

sample is not nationally representative. There also may be biased answers from measurements used because the participants had to answer questions to an administrator. Also, the study doesn't mention if the mother and child were present at the same time or separately during the home interview. If both mother and child were present at the same time during the interview, one may not answer a question completely truthfully due to the others presence. The adolescents were responsible for recording their height and weight and may not be completely accurate. Lastly, the article mentions that age 15 is a common pubertal time in adolescents; therefore, the conflicts reported among parent and child may not be a result only from parent to child, it may be a conflict of the child to the parent (May, et al., 2006) . Regardless of the limitations, this study provides insight to the influential role the mother plays in developing eating behaviors among their female children.

Understanding the mother's overall relationship with her daughter and how it has been shown to predict disordered eating behaviors has been examined; however, exploring specific behaviors, such as control by the mother, has also shown a correlation to disordered eating in adolescence. Birch and Fisher (2000) performed a study which sought to understand the mother-child feeding strategies on the development of disordered eating behaviors in girls; specifically focusing on the amount of control the mother places on each daughter. There were a total of 197 girls approximately five years old and their mothers who participated in the study. Participants were gathered using advertisements and about two-thirds of mothers were employed. All of the participants were documented as relatively well educated individuals (Birch & Fisher, 2000). A series of different measures were used to assess the mother and daughter. Researchers collected data about the mother concerning her body mass index, food restraint using the Eating Inventory Scale and the Restraint Subscale, the perception of their daughters being overweight using the



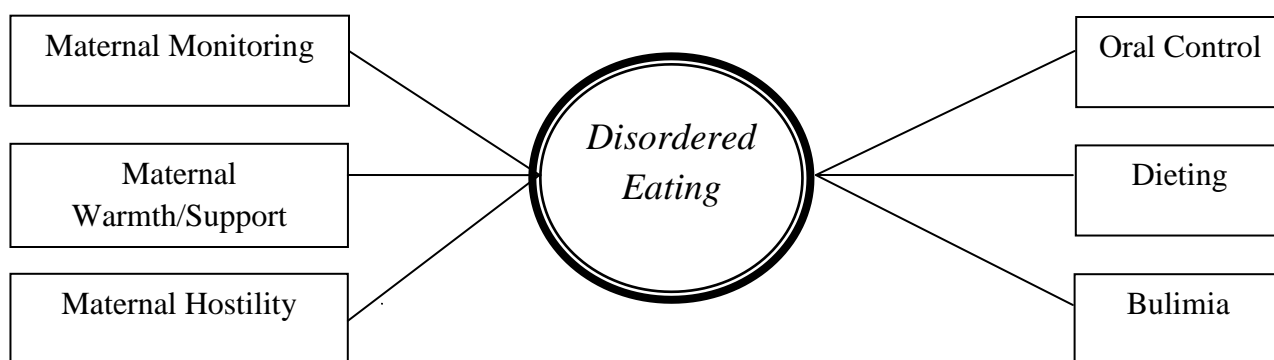
Perceived Child Weight Subscale and Concerns about Child Overweight Subscale (both self-reported), perceived child weight, and concern for child overweight. They also used questionnaires in order to determine if the mother restricted her child's food intake with the Child Feeding Questionnaire Restricted Subscale and Monitoring Subscale and Restricted Access Questionnaire. Lastly the daughters were assessed using COMX procedure that provided the girls, on two different occasions, a low energy drink the first session and a high energy drink the second time (Birch & Fisher, 2000). The girls were then provided the same meal for both occasions shortly following the drinks. The free access procedure was performed following the lunch where children were assessed to record their level of hunger (explained using images for the child as full to still hungry). The children were then left in a room for 10 minutes where they could eat a variety of snacks or play with a variety of toys. The daughters' weight was recorded as well as the daily energy intake of each daughter by their mother. Two weekdays and one weekend were randomly chosen where the mother would have to do a recall of all the food the daughter ate. Results showed that the sample of mothers was generally overweight (Birch & Fisher, 2000). The mothers' concern for their daughters' weight increased as their daughters' weight increased. Also, as the daughters' weight increased, the mothers were more likely to use dietary restraint (Birch & Fisher, 2000). This control over food intake exhibited by the mother may give insight as to how children become exposed to restricted eating behaviors. Data has shown that mothers who engage in dietary restriction themselves were more likely to limit the foods given to their daughters. The effect this controlled feeding pattern has on the daughter was shown by the daughters' inability to decrease the amount of food eaten during lunch, regardless of the low energy drink or high energy drink (Birch & Fisher, 2000). Also, following the lunch and after stating that the daughter was full, daughters of dietary restricted mothers still ate the

available snacks. Mothers who engaged in restrictive behaviors also were shown to report their daughters 24 hour dietary recall as consuming less than others. This study provides good insight to how disordered eating patterns are not only genetically linked but environmentally influenced; however, limitations occurred within this study. The sample consisted of a small sample of primarily Caucasian individuals; therefore, it does not represent the overall diverse population. The article specifically mentions that other ethnicities, such as Hispanics, are at even higher rates of obesity and should be examined (Birch & Fisher, 2000). Also, measurements of the participants used self-administered questionnaires which commonly provide bias in the results (Birch & Fisher, 2000). This study differed from the previously mentioned articles because it mentioned the effect of maternal control and the child's disordered eating which resulted in over eating. Although this study presented similar components such as the mother personally struggling with disordered eating behaviors, this article presents the fact that this problem is not a one way street. Children can develop a range of disordered eating patterns from food refusal to eating when not hungry.

The articles I have previously outlined show the familial influence on disordered eating; however, a majority of research has only been performed during infancy and in young adults. These articles provide the information needed to understand how the mothers' mental health, their relationship to their child, and their amount of control in parenting have influences on their children; however, there needs to be more research performed during the adolescent years in a female's life, examining specific factors which may be significant in the development of disordered eating habits due to maternal influences. The overall goal of this study is to examine the maternal influence on adolescent girls at age 15. This study aims to examine if maternal influences such as maternal monitoring/supervision, maternal warmth/support, and hostility

collectively or independently influence the development of bulimia, oral control, and dieting among 15 year old girls as shown in Figure 1. It is expected that higher levels of maternal monitoring and/or hostility will increase the rate of bulimia, oral control, and dieting among the girls; whereas maternal warmth and support will decrease the development of bulimia, oral control, and dieting.

Figure 1.



## **METHODS**

### **Participants**

The National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD) is a longitudinal study which looks to examine the relationship between the developing child and their childcare experiencing while growing up from infancy through adolescence. The children in the SECCYD were followed from birth through age 15; Phase I includes assessments taken from birth through 36 months, Phase II includes assessments taken at 54 months through 1st grade, Phase III includes assessments taken from grade 2 through 6, and Phase IV includes assessments taken at ages 14 and 15. This is a

multi-site study, gathering information from 1,364 children at birth in Arkansas, California, Kansas, Texas, Massachusetts, North Carolina, Pennsylvania, Virginia, Washington, and Wisconsin. Overtime the longitudinal study was reduced to 1,009 participants in phase IV (age 15) due to loss of participants; however, in this specific study only the females are being examined causing the total participants to be 490. Children in this sample were classified as White (80%), Black/African American (13%), Asian/Pacific Islander (2%), and other (5%). Questions regarding Hispanic ethnicity were asked separately, comprising 6% of the sample size.

### **Procedures**

A multi-method approach was also used in collecting data by using observational, behavioral, clinical, and survey methods to obtain data. These methods to gather data included computer assisted personal interviewing, computer assisted telephone interviewing, coded onsite observations, cognitive assessment tests, face to face interviews, mail questionnaires, self-answered questionnaires, on-site questionnaires, and telephone interviews. These methods were used both at the home of the participant and also used during the participants visit to the actual research laboratory in order to collect data for the major assessment periods. Telephone interviews were used to collect data from the participants between the major assessment periods. A random sampling method was used to gather one parent and two parent families that included mothers who work or go to school full time, mothers who work or go to school part time, mothers who stayed at home with their child, and participants who represent overall demographic diversity. Exclusions included mother younger than 18 years of age at the child's birth, families that planned on moving in the following three years, children with severe disabilities who were hospitalized for more than seven days after birth, and mothers that did not speak English sufficiently.

## Measures

*The Eating Attitudes Test (EAT)* was given to children at the age of 15 to determine any of their attitudes or behaviors that may be imminent of disordered eating behaviors. This disordered eating questionnaire also included items to show possible binge eating behaviors. The EAT questionnaire consist of 26 items on a Likert scale that range from 1 (never) to 6 (always). In recording the data, the most symptomatic children would have responses with a score of 3 (always), the next highest symptomatic behavior would be scored as 2 (usually), and the next most symptomatic as 1 (often). The remaining scores out of the 6 possible Likert scale scores (sometimes, rarely, never) all receive a score of 0. Examples of questions on EAT include: “I avoid eating when I am hungry” and “I feel extremely guilty after eating”. When all scores are calculated, those with higher scores designate higher symptomology of disordered eating behaviors. Garner reported good reliability for the scale in females, ranging from 0.79 to 0.94.

*“Getting Along With My Parent”* -Children at the age of 15 were given the Getting Along With My Parent questionnaire which measured the amount of parental warmth/support and hostility. This questionnaire was comprised of 34 items where 17 items were about the primary adult in the household (parent #1; mother) and the other 17 items were asked about another adult in the household (parent #2; father). Responses from the questionnaire were scored on a four-point Likert scale ranging from 1=“Never” to 4=“Always”. Parental warmth/support scores for parent #1 have high internal reliability (9 items, Chronbach’s alpha=.92) whereas parental hostility for parent #1 had moderate internal consistency reliability (8 items, Chronbach’s alpha=.79). Parental warmth/support scores for parent #2 has high internal reliability (9 items, Chronbach’s alpha=.94) whereas parental hostility for parent #2 had moderate internal reliability (8 items, Chronbach’s alpha=.80). Scoring for parent #1 warmth/support was calculated by

summing responses to items 1, 3, 5, 7, 9, 11, 12, 15 and 17. Possible and actual scores ranged from 9 to 36 and higher scores indicated warmer and more supportive mother-child relationships. Scoring for parent #1 hostility was calculated by summing the responses to items 2, 4, 6, 8, 10, 13, 14 and 16. Possible scores ranged from 8 to 32 while actual scores ranged from 8 to 27 with higher scores indicated higher maternal hostility. Scoring for parent #2 warmth/support was calculated by summing responses to items 1, 3, 5, 7, 9, 11, 12, 15 and 17. Possible and actual scores ranged from 9 to 36 and higher scores indicated warmer and more supportive mother-child relationships. Scoring for parent #2 hostility was calculated by summing the responses to items 2, 4, 6, 8, 10, 13, 14 and 16. Possible scores ranged from 8 to 32 while actual scores ranged from 8 to 29 with higher scores indicated higher maternal hostility. An example of a question from the parental warmth, support, and hostility questionnaire include: "When you and your mother spend time talking or doing things together, how often does your mother..." and example answers include: "get angry at you", "listen carefully to your point of view", "boss you around a lot", or "tell you she loves you".

*"Keeping Tabs"*-This is a 9 item questionnaire which records the amount of parental supervision and monitoring perceived by the child, mother, and father independently. The parents' version is an 11 item questionnaire regarding parental supervision and monitoring of adolescent activities. The children's version is the same questionnaire, but only 9 items. Sample items include: "How much does a parent or other adult in your home know about where you go right after school?"; "When you are home without a parent or other adult, do you know how to get in touch with them?" Adolescents are asked to respond to all 9 items on a 4 point Likert scale: 1= "Doesn't know at all", 2= "Knows a little bit", 3= "Knows a lot", 4= "Knows everything". The parents' questionnaire asks questions concerning if the parent sets a time for

their child to be home on weekday and weekend nights. Raw items used to create the score had moderate internal reliability (child study 9 items, Chronbach's  $\alpha = .83$ ; 11 item mother Chronbach's  $\alpha = .77$ ; father Chronbach  $\alpha = .84$ ). The scores range from 1-4, with higher scores representing greater paternal monitoring. An example of a question found on the parental monitoring and supervision questionnaire include: "how much does a parent or another adult in your home know about..." and answers included: "who you spend time with", "where you go right after school", "when you leave home to go somewhere", or "do you tell a parent or other adult where you are going?".

Income was determined using the "National Institute of Child Health and Human Development Study of Child and Youth Development Age 15 Update Interview" version 1.1 from January 9, 2006. A few samples of questions to obtain information about the income level of participants, specifically mothers, included: "are you working for pay?", "what is your job title?", and "how many hours in a typical week do you work at this job?".

### **Data analysis**

Current analyses only included girls in phase IV (15 years old). Using a linear regression, six separate analyses were run. The first group of linear regression analyses compared the dependent variables: oral control, dieting, and bulimia separately to the collective independent variables of maternal monitoring, maternal warmth/support, maternal hostility, and income. The a priori alpha level was set at .05 for statistical significance. A second linear regression was then performed which again compared oral control, dieting, and bulimia separately to the collective set of independent variables of maternal monitoring, child parental monitoring, and income. Again, the a priori alpha level was set at .05 for statistical significance. Income was added to each analysis in order to control for different ranges of income for each participant.

## **RESULTS**

### **Oral Control**

The linear combination of maternal monitoring, maternal warmth/support, maternal hostility, and income did not predict the occurrence of oral control at age 15 ( $F(4,446)=1.48$ ,  $p=.206$ ). After reviewing the independent variables separately, it appeared that there was not a relationship between hostility and oral control ( $t(4)=.495$ ,  $p=.621$ ), maternal monitoring and oral control ( $t(4)=-.805$ ,  $p=.422$ ), or income and oral control ( $t(4)=-.507$ ,  $p=.612$ ). However, there was a relationship between parental warmth/support and oral control ( $t(4)=2.14$ ,  $p=.033$ ). The overall effect size of this regression was small ( $R^2=.013$ ,  $SEE=4.13$ ) therefore, the results should be interpreted with caution. These results suggest that parents who engage in warm and supportive behaviors may increase the risk of their daughter engaging in oral control.

A second analysis was performed with oral control as the dependent variable. A linear combination of maternal monitoring, child parental monitoring, and income did not predict the occurrence of oral control at age 15 ( $F(3,447)= 1.31$ ,  $p=.271$ ). Examining the individual data closer, results showed there was no relationship between maternal monitoring and oral control ( $t(3)=-.999$ ,  $p=.318$ ), no relationship between child parental monitoring ( $t(3)=1.87$ ,  $p=.063$ ), and no relationship between income and oral control ( $t(3)=-.356$ ,  $p=.722$ ). The effect size was small ( $R^2=.009$ ,  $SEE=4.13$ ) therefore, the results are not practically important findings. Oral control was not associated with any of the three variables in this data set.

### **Bulimia**

The linear combination of maternal monitoring, maternal warmth/support, maternal hostility, and income did predict the occurrence of bulimia and food occupation at age 15 ( $F(4,446)=8.14$ ,  $p=.000$ ). Looking closer at the individual relationships between the independent



and dependent variables, the results showed there was no relationship between parental warmth/support and bulimia ( $t(4)=.655$ ,  $p=.513$ ) and there was no relationship between income and bulimia ( $t(4)=-.125$ ,  $p=.901$ ). However, there was a positive correlation between parental monitoring and bulimia ( $t(4)= 2.19$ ,  $p=.029$ ) and a negative correlation between hostility and bulimia ( $t(4)=-3.77$ ,  $p=.000$ ). The effect size of this sample was relatively small ( $R^2=.068$ ,  $SEE=3.68$ ) therefore, although the results are statistically significant, they are not practically significant and generalization of this finding should be cautioned. These results imply that the overall combination of maternal monitoring, maternal warmth/support, and maternal hostility did play a role in increasing the occurrence of bulimia in adolescence; specifically that parents who monitor their children more are likely to increase bulimic behaviors, and parents that engage in high levels of hostility are less likely to have children with bulimic behaviors.

A second analysis was performed with bulimia and food control at the age of 15. The linear combination of maternal monitoring, child parental monitoring, and income did predict bulimia and food occupation at age 15 ( $F(3, 447)= 9.24$ ,  $p=.000$ ). Closer examination of the different variables showed there was no relationship between maternal monitoring and bulimia ( $t(3)=1.14$ ,  $p=.256$ ) and no relationship between income and bulimia ( $t(3)=.109$ ,  $p=.914$ ). However, there was a relationship between child parental monitoring and bulimia ( $t(3)=4.69$ ,  $p=.000$ ). Again, the effect size was relatively small ( $R^2=.058$ ,  $SEE=3.69$ ) therefore, although there is statistical significance, the results are not practically significant, and as such, should be interpreted with caution. Similar to previous data, the combination of all variables showed there is a relationship; specifically children who feel their parents express high levels of monitoring were at an increased risk of showing bulimic behaviors.

## Dieting

The linear combination of maternal monitoring, maternal warmth/support, maternal hostility, and income did not predict the occurrence of dieting in adolescents at age 15 ( $F(4,446) = 1.26, p = .285$ ). After reviewing each variable separately, there is no relationship between maternal warmth/support and dieting ( $t(4) = .108, p = .914$ ), no relationship between hostility and dieting ( $t(4) = -1.71, p = .088$ ), no relationship between parental monitoring and dieting ( $t(4) = -.497, p = .619$ ), and no relationship between income and dieting ( $t(4) = -.299, p = .819$ ). Again, the effect size of this sample was small ( $R^2 = .011, SEE = 10.55$ ) therefore, the results from this comparison are not practically or statistically significant. Overall, there was no relationship between any of the variables and dieting.

A second analysis was performed with the dieting data. The linear combination of maternal monitoring, child parent monitoring, and income does not predict dieting at age 15 ( $F(3, 447) = 2.26, p = .080$ ). Reviewing the individual variables showed that there is no relationship between parental monitoring and dieting ( $t(3) = -1.06, p = .288$ ) and no relationship between income and dieting ( $t(3) = -.164, p = .870$ ). However, there is a relationship between child parental monitoring and dieting ( $t(3) = 2.56, p = .011$ ). The effect size is again small ( $R^2 = .015, SEE = 10.51$ ) therefore, the results are not practically significant. This data shows there was not a significant relationship between all the variables combined; however, there was a relationship showing higher parental monitoring increases the risk of dieting among adolescents.

**Table 1.** Linear regression comparing the four independent variables of maternal monitoring, maternal warmth/support, maternal hostility, and income in combination and independently with the dependent variables including oral control, bulimia, and dieting.

	Maternal Monitoring	Maternal Warmth/Support	Maternal Hostility	Income	Combination of Variables
Oral Control	.42	.03*	.62	.61	.21
Bulimia	.30	.51	.00***	.90	.00***
Dieting	.62	.91	.09	.82	.29

Significant results are indicated as follows: \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p \leq .05$ , .10

**Table 2.** Linear regression comparing the three independent variables of maternal monitoring, child-parental monitoring, and income in combination and independently with the dependent variables oral control, bulimia, dieting.

	Maternal Monitoring	Child-Parental Monitoring	Income	Combination of Variables
Oral Control	.32	.06	.72	.27
Bulimia	.26	.00***	.91	.00***
Dieting	.28	.01**	.87	.08

Significant results are indicated as follows: \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p \leq .05$ , .10

## **DISCUSSION**

The present study aimed to explore the relationship between maternal monitoring, maternal warmth/support, and maternal hostility and the different outcomes of oral control, bulimia, and dieting. The expected outcome of this study was that higher levels of maternal monitoring and higher maternal hostility would increase the risk of developing oral control, bulimia, and dieting among adolescent girls age 15. However, it was expected that higher levels of maternal warmth/support would decrease the occurrence of oral control, bulimia, and dieting.

The first group of variables analyzed was maternal monitoring, maternal warmth/support, maternal hostility, and income in relation to the development of oral control. Although hostility, monitoring, and income had no effect in the development of oral control by adolescents age 15,

there was a positive relationship between maternal warmth/support and oral control. The results showed that higher levels of maternal warmth and support were related to higher levels of oral control; suggesting that mothers who are warm and supportive may increase the development of oral control in their children. The findings from this analysis support the original hypothesis and the data in the Birch and Fisher (2000) article; which said more controlling mothers and mothers who were restrictive of their children's food increased the occurrence of overeating in their daughters. This finding shows support for how mothers may increase the oral control of their daughter because the daughter may interpret restrictive or controlling behaviors as warmth or supportive attention from their mother.

The next group of variables examined was maternal monitoring, maternal warmth/support, maternal hostility, and income in relation to bulimia. The results showed that there was no relationship between maternal warmth/support, and income in the development of bulimia. However, maternal monitoring was positively related to bulimia; while hostility was negatively related to bulimia. This meant that mothers who engaged in high supervision and monitoring over their children may be increasing the occurrence of bulimia in their daughters; as predicted in the hypothesis. Also, the results of this study showed that high levels of hostility are related to low levels of developing bulimia. This finding from this analysis does not support the original hypothesis, and the large quantity of research that shows negative characteristics of parents influence the development of disordered eating; such as the article written by Fallon which stated, "Mothers of anorexic and bulimic daughters have been described as symbiotic, intrusive, enmeshed, controlling, nonresponsive, withdrawn, distracted, and aloof" (Fallon, 1994). May, Kim, McHale, and Crouter (2006) also reported an increased concern of weight in females when determining the amount of conflict reported between mother and daughter.

The last analysis examined maternal monitoring, maternal warmth/support, maternal hostility, and income to the development of dieting habits. The results of this analysis showed there was no relationship between any of the variables and the occurrence of dieting among adolescents age 15 years old. Although the data did not turn out exactly as expected and mostly disconfirmed the hypothesis of the study, there were aspects which support other research studies.

There were some unexpected findings within this study. After performing the first set of analyses concerning maternal monitoring, maternal warmth/support, and maternal hostility, I discovered there was another data set which measured the child's perception of their parents monitoring. This provided a second analysis which was comprised of comparing the collection of independent variables of maternal monitoring, child parental monitoring, and income with each dependent variable of oral control, bulimia, and dieting. The first group compared maternal monitoring, child parent monitoring, and income with oral control among adolescents at age 15. The results showed that there was no relationship between any of the variables and oral control. The second group compared maternal monitoring, child parent monitoring, and income with dieting. Again, the results showed no relationship between maternal monitoring and income with dieting; however, the results did show a positive relationship between child parental monitoring and dieting. This meant that children who reported their parents as having a high level of supervision over them also reported higher levels of dieting. The last analysis compared the maternal monitoring, child parental monitoring, and income with the occurrence of bulimia. Again, maternal monitoring and income had no relationship with the outcome of bulimia; however, there was a positive relationship between child parental monitoring and the occurrence of bulimia. This data suggested that higher levels of parental supervision and monitoring

reported by the child were related to higher levels of bulimia among adolescent girls age 15. The results found during this analysis are supported by Paulson and Sputa (1996) which stated, “Many of the parenting studies during adolescence considered only adolescents' perceptions of parenting, although research has reported that adolescents' and parents' perceptions of family characteristics may be very different and may predict adolescent outcomes differently”. This study further went on to say that mothers and fathers were more likely to report themselves as more accepting than their children reported them (Paulson & Sputa, 1996). These findings may have implications in determining what exactly causes disordered eating behaviors in adolescents. These results suggest that adolescents and parents see parenting styles differently; therefore, while a parent may believe they are raising their children in a happy home, the adolescent may feel differently.

There are limitations on this study which may have played an influential factor for the outcome of the data. First, although the sample of children measured allowed for a variety of different children; the sample may be unrepresentative for certain races, ethnicities, and specifically boys and therefore, researchers may need to perform more studies in order to generalize the information to the overall population. A second limitation is the questionnaire structure. Results are based on self-reports from both the mother and child which leads to the possibility of bias or forgetfulness. A third limitation specifically for the child parental monitoring section involves the monitoring information based on both parents (mother and father) for the child. This therefore cannot be specified to the child's perception of only the mother's monitoring and supervision as the rest of the study has been.

Future research on this subject of maternal influences on the development of disordered eating in adolescent girls at age 15 holds great importance. After completing this study some

questions have been presented that should have further examination in future studies. It would be beneficial to know why maternal monitoring has a relationship with the occurrence of bulimia, but not oral control or dieting. Also, this study suggests that there may be different perceptions of what is considered supervisory behavior by a mother and their child. It seems that the children are most likely to report parental monitoring as higher than the mother's self report of their monitoring. Research may want to examine how different perceptions of parenting, by the mother and the child, affect the outcome of disordered eating in adolescents and how understanding these differences could possibly decrease the rate of disordered eating symptoms.

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Academic Vita  
Jacquelyn Shea McWilliams  
JSM5171@psu.edu

Local Address

340 East Beaver Avenue #232  
State College, PA 16801  
(484) 824-1015

Permanent Address

125 Boyer Road  
Oley, PA 19547

**EDUCATION & RELATED COURSES**

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**The Pennsylvania State University, University Park, PA.**

Schreyer Honors College

Degree: B.S. in Biobehavioral Health

Minor: Psychology

Thesis Title: "Maternal Influences in the Development of Adolescent Disordered Eating at Age Fifteen"

Thesis Supervisor: Dr. Lori A. Francis

Attendance: 2007-Present

Expected Graduation: Spring, 2011

**HONORS/AWARDS**

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- Health and Human Development Honor Society March 2010-Present
- Honor Society of Phi Kappa Phi March 2010-Present
- Dean's List Academic Achievements Fall 2007-Present
- Eastern Pennsylvania Horseman's Association Scholarship Fall 2007-Present

**ACTIVITIES**

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- The Penn State IFC/Panhellenic Dance Marathon (THON) Fall 2009-Spring 2011
  - Member of the Hospitality committee
- Red Cross Spring 2010
  - Volunteered time organizing and checking patients in.
- The Second Mile Fall 2010
  - Spent an afternoon playing games with children.
- Valley Mist Farm Summer Horse Camp Summer 2006-2009
  - Volunteered to assist inexperienced children working around horses.