Cross-Generational Similarities Between Mothers' and Daughters' Abnormal Eating Behaviors

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CROSS-GENERATIONAL SIMILARITIES BETWEEN MOTHERS' AND DAUGHTERS' ABNORMAL EATING BEHAVIORS

by

Kimberly K. Bushman

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1995
ABSTRACT

Cross-Generational Similarities Between Mothers' and Daughters' Abnormal Eating Behaviors

by

Kimberly K. Bushman, Doctor of Philosophy

Utah State University, 1995

Major Professor: Dr. David M. Stein
Department: Psychology

This study was an investigation of the similarities and differences between mothers' and daughters' self-reported eating and dieting behavior. Also investigated was actual eating behaviors of mothers and daughters after consuming a milk shake preload presented as containing the caloric equivalents of one average meal.

Thirty-five mothers and their sixth-grade daughters completed a series of self-report instruments including the Bulimia Test-Revised, the Revised Dietary Restraint Scale, and the Anorexia-Bulimia Inventory. Subjects then individually completed a contrived ice cream taste test, which involved consuming a milk shake preload prior to tasting vanilla, chocolate, and strawberry ice cream. The relationship between mothers' and daughters' grams of ice cream consumed was negligible. However, several noteworthy relationships were found between mothers' and daughters' self-report indices. Results are discussed in terms of a modeling hypothesis for abnormal eating patterns.

(115 pages)
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Kimberly K. Bushman
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td></td>
<td>LIST OF FIGURES</td>
<td>vii</td>
</tr>
<tr>
<td>I.</td>
<td>PROBLEM STATEMENT</td>
<td>1</td>
</tr>
<tr>
<td>II.</td>
<td>REVIEW OF THE LITERATURE</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Dietary Restraint and its Relation to Overeating</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Family Environment</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Dietary Restraint in Preadolescent Girls</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Comparisons Between Mothers' Eating Behavior and Attitudes and Daughters' Eating Behavior and Attitudes</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Research Hypotheses</td>
<td>16</td>
</tr>
<tr>
<td>III.</td>
<td>METHOD</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Population and Sample</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Procedures</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Data and Instrumentation</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Data Analysis</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Supplementary Analyses</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>34</td>
</tr>
<tr>
<td>IV.</td>
<td>RESULTS</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Preliminary Analysis</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Noteworthy Relationships Between Individual Indices</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Relationship Between Grams Eaten and Self-Report Data</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Hypothesis Five: Rate of Eating</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Supplementary Analysis</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>50</td>
</tr>
<tr>
<td>V.</td>
<td>CONCLUSIONS</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Relationships among Mothers' and Daughters' Self-Report Indices</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Relationship Between Self-Report Indices and Rate of Eating</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Relationship Between Self-Report Indices and Grams Eaten</td>
<td>55</td>
</tr>
</tbody>
</table>
CONTENTS (continued)

<p>| Evidence Consistent with a Modeling Hypothesis of Abnormal Eating Patterns | 56 |
| Summary of Methodological Issues | 56 |
| Implications for Future Studies | 59 |
| Concluding Statements | 59 |
| REFERENCES | 61 |
| APPENDICES | 65 |
| Appendix A: Bulimia Test--Revised (BULIT-R) (Mother/Daughter) | 66 |
| Appendix B: Restraint Scale--Revised | 79 |
| Appendix C: Consent Form and Physical Status Rating Form | 82 |
| Appendix D: Flavor Ratings and Preference Forms | 85 |
| Appendix E: Debriefing Letter | 90 |
| Appendix F: Anorexia Bulimia Inventory (ABI) | 92 |
| Appendix G: ABI Subscales | 97 |
| Appendix H: Coding Form | 101 |
| VITA | 103 |</p>
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reliability Coefficients for Self-Report Indices</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Cronbach's Alpha Coefficients for Mother and Daughter Indices</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>Means, Standard Deviations, Maximum, and Minimum Scores for Mothers' and Daughters' Indices</td>
<td>36</td>
</tr>
<tr>
<td>4</td>
<td>Pearson Product-Moment Correlation Coefficients Between Hunger and Snacking Ratings and Scores on Other Mothers' and Daughters' Indices</td>
<td>39</td>
</tr>
<tr>
<td>5</td>
<td>Pearson Product-Moment Correlation Coefficients Between Mothers' and Daughters' Self-Report Indices</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>Pearson Product-Moment Correlation Coefficients among Mothers' Self-Report Indices</td>
<td>41</td>
</tr>
<tr>
<td>7</td>
<td>Pearson Product-Moment Correlation Coefficients among Daughters' Self-Report Indices</td>
<td>43</td>
</tr>
<tr>
<td>8</td>
<td>Pearson Product-Moment Correlation Coefficients Between Grams Eaten and Scores on the Mother and Daughter Indices</td>
<td>45</td>
</tr>
<tr>
<td>9</td>
<td>Pearson Product-Moment Correlation Coefficients Between Average Rate of Eating and Scores on Other Mothers' and Daughters' Indices</td>
<td>48</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Relationships among variables</td>
<td>17</td>
</tr>
</tbody>
</table>
CHAPTER I

PROBLEM STATEMENT

Bulimia nervosa, a clinical eating disorder, has been associated with many physical and psychological complications (Brownell & Foreyt, 1986). In a review of the literature, Striegel-Moore, Silberstein, and Rodin (1986) suggested that the prevalence of bulimia nervosa has increased in the past few years. Results from numerous studies suggest that females comprise as much as 90% of the bulimic population (for a review of the literature, see Striegel-Moore et al., 1986). Thus, being a woman is one key risk factor for developing bulimia nervosa.

One may ask why women in particular are more likely to develop Bulimia Nervosa? One proposed answer to this question has been that women experience greater sociocultural pressure to become or remain thin than do men (Garner, Rockert, Olmsted, Johnson, & Coscina, 1983; Striegel-Moore et al., 1986). Garner et al. (1983) suggested that the fixation on thinness for women has taken a "fetish-like quality" (p. 515). They proposed that women are bombarded with messages from the media suggesting that being thin is associated with success, beauty, self-worth, and personal happiness.

Examples of thinness being linked to perceptions of success and beauty are the females portrayed in Playboy magazine and those in beauty pageants. Garner, Garfinkel, Schwartz, and Thompson (1980) summarized body measure statistics on Playboy centerfolds and Miss America Pageant contestants. They reported that both groups of females have become significantly thinner over the past 20 years. Not only have the Playboy centerfolds become thinner, but they possess smaller busts, larger waists, and smaller hip measurements. Thus, they have also "changed shape" over the years. Strikingly, the drift toward thinner shapes in Playboy centerfolds is in the opposite
direction of the trend of actual weight changes in the general female population. Garner et al. (1980) reported that as the average weight of the centerfolds has decreased, the expected weight for women under the age of 30 has increased at about the same rate.

The value society places on attractiveness and thinness appears to be internalized by girls at an early age. Feldman, Feldman, and Goodman (1988) reported that girls as young as 5 and 6 six years of age are concerned about their body image and have expressed fears about weight gain. Guyot, Fairchild, and Hill (1981) found a correlation between self-esteem and body build for girls in the fourth, fifth, and sixth grades but not for boys in the same grades. Fourth-, fifth-, and sixth-grade girls have also reported dieting behaviors such as skipping desserts and/or snacks to lose weight. Even more striking are reports that almost 4% of the fifth- and sixth-grade girls surveyed acknowledged using self-induced vomiting as a strategy for weight loss (Stein & Reichert, 1990).

The origin of extreme weight loss behaviors in young women is uncertain. It has been suggested that some eating behaviors are learned through observation. For instance, it has been documented that some preschool children will change their vegetable preference from their preferred choice to their peers' preferred choice after 4 days of eating together (Birch, 1980). Further evidence that eating behaviors may be learned by observation was offered by Agras, Berkowitz, Hammer, and Kraemer (1988). They reported correlations between children's (18 months old) caloric intake with both mother's rapid eating style and father's duration of eating. Birch, Marlin, Kramer, and Peyer (1981) reported that compared to overweight children and their mothers, thinner children and their mothers ate slower, ate less food, and talked more to one another about food and nonfood topics. Thinner children's mothers also made more positive comments about food during a lunch situation compared to the mothers of heavier
children. Thus, this suggests a possible relationship between weight and social influences during eating.

Recent research findings suggest that extreme eating disorders such as anorexia nervosa may run in families. For example, compared to first-degree relatives of control subjects, female relatives of anorexia patients, in one sample, have a significantly higher incidence of both anorexia nervosa and bulimia nervosa (Gershon et al., 1983). Thus, the etiology of extreme food restriction, binge eating, and the motivation to lose an inordinate amount of weight, as reflected in eating disorders, may be related to social modeling factors in families and/or genetic influences.

Mothers are traditionally the primary caregivers and meal providers for their children. For female children in particular, mothers may be the most significant role models of society’s expectations of women (e.g., being thin, the norm of "dieting," etc.). It is intuitively reasonable that children, especially girls, might learn both normal and abnormal eating-behavior patterns from family members, particularly other female role models (i.e., mothers). Pike and Rodin (1991) demonstrated that daughters with eating disorders had mothers who began dieting at a younger age than mothers of noneating disordered daughters. Hill, Weaver, and Blundell (1990) reported that preadolescent girls who scored high on a measure of dietary restraint had mothers with high dietary restraint scores. In addition, both high-restraint daughters and mothers attributed eating more often to boredom, negative moods, and being upset than low-restraint mothers and daughters.

In summary, the existing literature suggests that there may be a positive relationship between mothers’ and daughters’ eating and dieting behaviors. However, the literature is based solely on self-report data. Further studies are needed to verify whether mothers and daughters report not only similar eating and dietary behaviors, but
also demonstrate similar eating behaviors in an eating situation. Thus, self-report data might be considered more valid if found to be supported by observational data. Additional research is also needed regarding the relationship between mothers' abnormal binge-eating tendencies and overeating in their daughters.
CHAPTER II
REVIEW OF THE LITERATURE

In the literature review that follows, additional topics relevant to understanding possible etiological factors of dysfunctional eating patterns in young women will be outlined. These topics include (a) the relationship between dietary restraint and binge eating, (b) the family environment, and (c) the relationship between mothers' and daughters' abnormal eating behaviors and attitudes.

Throughout the last decade, studies have been published regarding the dieting concerns of girls (Hill et al., 1990; Johnson-Sabine, Wood, Patton, Mann, & Wakeling, 1988; Pike & Rodin, 1991; Stein & Reichert, 1990; Wardle & Beales, 1986). The research has been stimulated by evidence that the highest incidence of abnormal eating is reported by adolescents and young women (Striegel-Moore et al., 1986). However, as has been noted previously, the etiology of the various clinical and subclinical eating disorder syndromes is uncertain.

The discussion that follows highlights what is known about the etiology of abnormal eating patterns. Specifically, research conducted to date on the issue of dietary restraint in pre-adolescent girls, and the relationship between mothers' and daughters' abnormal eating patterns will be summarized. From time to time, the author will be drawing on information from literature on anorexia nervosa because of the overlap in symptomatology of anorexia nervosa and bulimia nervosa, as well as the lack of information on certain topics regarding Bulimia Nervosa per se.

Dietary Restraint and Its Relation to Overeating

Dietary restraint is one variable that has been associated with clinical eating disorders. Dietary restraint is characterized not only by recurrent restricted food intake,
but also by a paradoxical tendency to overeat or binge. Initially, researchers studying dietary restraint focused on distinguishing eating behaviors of overweight from normal weight individuals (Herman & Mack, 1975). However, just as most obese persons are assumed to be chronic dieters, many women of normal weight also engage in chronic food-restriction dieting and paradoxical overeating. Thus, recent researchers have focused on whether high- versus low-restraint women generally tend to maintain food restriction in the presence of various stimuli that might undermine successful restraint.

One method of research commonly used in this area is to require subjects to consume a food preload (e.g., a milkshake). This preload is followed by the consumption of additional food in the context of a "taste-test." In their review of the literature, Wardle and Beinart (1981) concluded, "While normal (non-dieting) subjects show calorie regulation, dieting subjects of all weights are inclined to overeat relative to normal subjects after a preload that they believed contained a large number of calories" (p.104).

Two studies in which subjects were presented with a milkshake identified as being either high or low in caloric content were completed by Polivy (1976) and Spencer and Fremouw (1979). Results from both studies demonstrated an interaction between level of restraint (i.e., high versus low) and perception of the caloric content of the preload. Relative to all other subjects, high restrainers ate significantly more food during the taste-test when they believed they had already consumed a high calorie milkshake preload. However, when they believed they had consumed a low calorie milkshake preload, high-restraint subjects maintained their restraint. Subjects reporting a low level of restraint, however, consumed less during the taste-test when they thought they had already consumed a high calorie preload (versus a low calorie preload). This suggests that high restrainers may hold very rigid, all-or-nothing cognitions regarding eating
versus continued restraint. Thus, high restrainers are prone to relinquish control over food intake when they perceive they have exceeded their calorie allotment for the day. On the other hand, low restrainers' consumption is based on level of satiation.

Anxious and depressed mood has likewise been shown to be related to disinhibition. Ruderman (1985) reported a restraint x mood interaction. An induced "depressed" mood resulted in restrained eaters consuming significantly more food than the "neutral" mood group. Unrestrained eaters were found to eat similar amounts of food in both conditions.

Similar results were reported by Frost, Goolkasian, Ely, and Blanchard (1982). In their study, 68 female undergraduates were classified as high or low restrainers and then completed an experiment in which either an elated, neutral, or depressed mood was induced. Mood was induced by having subjects read 50 self-referent statements that either progressively became more positive or negative. The neutral mood group read 50 non-self-referent statements.

The authors reported that the results of the study suggested that total restraint alone is "weakly" related to number of M & M candies eaten ($F[2,49] = 2.46, p = .096$). However, when combining the effects of mood with restraint a stronger effect was found. That is, high-restraint subjects in the depressed mood group ate more food than high-restraint subjects in the elated ($SMD = .72$) and neutral group ($SMD = .74$), as well as more than low-restraint subjects in either the depressed ($SMD = .86$), elated ($SMD = .44$), or neutral ($SMD = .47$) groups. Furthermore, low-restraint subjects' eating behavior did not differ significantly in any of the three mood states.

Similar findings were found by Herman and Mack (1975), who reported a restraint x anxiety interaction in subjects. High-restraint, anxious subjects ate more (although not significant) food than high-restraint, nonanxious subjects. Furthermore, low-restraint,
anxious subjects ate significantly less than nonanxious, low-restraint subjects. The results of these studies suggest that high-restraint subjects are likely to demonstrate disinhibition only when in a negative mood state.

Dritschel, Cooper, and Charnock (1993) reported a "weak" link between dietary restraint and overeating when they compared 50 women (between the ages of 18 and 35 years) of normal weight on dieting status, restraint status, and amount of food eaten in a laboratory. High- and low-restraint subjects were randomly assigned to either a "milkshake preload" or "no preload" condition. In an attempt to standardize level of fullness, the no-preload condition subjects were given an 8-ounce glass of water to drink prior to the taste-test. The food used in this study was six varieties of biscuits.

No significant main effect was obtained for restraint level ($F[1,46] = 2.69$, $p > .12$) or preload condition ($F[1,46] = .269$, $p > .11$). Nor was a statistically significant interaction obtained between restraint and preload condition ($F[1,46] = .118$, $p > .73$).

To better understand the relationship between restraint, dieting status, and eating, the present author calculated standardized mean differences (SMDs) for the mean contrasts for the four groups for grams of biscuits consumed. Cohen's (1988, pp. 25-27) standards of .2 as a small effect size, .5 as a medium effect size, and .8 as a large effect size were used as criteria to judge the magnitude of SMDs. These are arbitrary, though reasonable conventions and must be used with caution. For high-restraint subjects, a small effect size was found ($SMD = .33$) between the means of the preload and the no-preload groups. For low-restraint subjects, a moderated effect size ($SMD = .66$) was obtained for the mean contrast for the two groups. For the preload condition, a small effect size ($SMD = .36$) was found for the contrast between the means for high- and low-restraint subjects. Finally, for the no-preload condition, a moderate effect size
(SMD = .57) was obtained for the mean contrast between high- and low-restraint subjects.

Although the authors of this study (Dritschel et al., 1993) stated that the "link between dietary restraint and overeating or bulimic episode is, at most, a weak one" (p. 297), the calculations of the SMDs suggest otherwise. Based on the magnitude of the SMDs, one can conclude that there is a tendency for high-restraint subjects who have consumed a milkshake preload to counterregulate by eating more biscuits (on average) than high-restraint subjects who have not consumed additional calories or low-restraint subjects in either situation.

In summary, research supports the notion that differences exist between high- and low-restraint subjects in regards to quantity of food eaten under several laboratory conditions. Specifically, high-restraint subjects have been shown to eat significantly more food (than low-restraint subjects) when: (a) they perceive they have exceeded their calorie allotment for the day, (b) they are in a state of dysphoria, and/or (c) they are in an anxious state.

Family Environment

The family system is another area for research into the etiology of overeating and bingeing. In a review of the literature, Rosenfield (1988) indicated that families of patients with bulimia are more restrictive, controlling, and conflictual than families of nonbulimics. Families of anorexics were described as being more interdependent and unusually close, compared to families of bulimics and other comparison families. Rosenfield also noted that anorexics reported having at least one other family member who deviated in weight and eating behavior. A higher incidence of clinical disorders (e.g., phobic avoidance, obsessive-compulsive behaviors, and alcoholism) was also noted for families of both bulimics and anorexics.
Wonderlich and Swift (1990) studied parental relationships and depressed mood in 26 women diagnosed with bulimia nervosa, 11 diagnosed with anorexia nervosa, 11 diagnosed with bulimic-anorexic, and 29 control subjects. Results showed no significant group differences on ratings of maternal control. Only the bulimic-anorexics rated their fathers as significantly less controlling than did controls.

Both the bulimia nervosa group and the bulimic-anorexic groups perceived their mothers as significantly more attacking and hostile than mothers of the other group members, as well as more hostile themselves. Furthermore, the subjects in the bulimia nervosa group perceived themselves as more attacking of their mother than did the control subjects. Similar findings were found in reference to paternal relationships and perception of attacking, hostility, and withdrawal behavior.

In reference to level of mood, although not different from one another, subjects in all three of the eating-disordered groups reported significantly higher levels of depression than did subjects in the control group. When subjects were regrouped into eating-disorder low depression, eating-disorder high depression, and control, the authors reported that only depressed eating-disordered subjects reported more hostility in their parental relationship than did control subjects. There were no statistically significant differences between nondepressed eating-disordered subjects and control subjects on measures of parental relationships.

In general, the findings from Wonderlich and Swift's (1990) study suggest that mood has a significant impact on subjects' (with a diagnosed eating disorder) perception of parental relationship.

Streiger, Leung, Puentes-Neuman, and Gottheil (1992) found statistically significant differences between the mean score of 715 high-school girls (classified as either asymptomatic [ASYM], mood disturbed only [MD], eating disturbed only [ED], or
mood and eating disturbed (EMD) on six items of the Family Assessment Device (referred to as Family Incohesion).

Standardized mean differences were calculated between the means contrasts for the groups on the measurement of Family Incohesion. A large effect size (SMD = 1.0) was found for the mean contrast between the EMD and the ED groups. A small effect size (SMD = .16) was found for the mean contrast between the EMD and the MD groups, and a large effect size (SMD = 1.1) was obtained for the mean contrast between the EMD and ASYM groups. Large effect sizes were calculated for the mean contrast between the MD and ED groups and the MD and ASYM groups (SMD = .86 and .95, respectively). A negligible effect size (SMD = .05) was calculated between the means for the ASYM and ED groups.

In summary, the results of the study by Streiger et al. (1992) suggest that subjects with both an eating disorder and mood disturbances, as well as subjects with a mood disturbance alone, perceived their family as more incohesive than those subjects manifesting an eating disorder alone or who were asymptomatic of both an eating disorder and mood disturbance. These findings suggest that the presence of an eating disorder alone does not equate with family dysfunction. However, the presence of a mood disturbance alone or concurrently with an eating disorder is more likely associated with family incohesion.

In summary, families of subjects with eating disorders are reported to be less cohesive and more conflicted than families of subjects with no eating disorder. The strength of this relationship is enhanced when one adds the presence of a mood disturbance concurrently with an eating disorder. Furthermore, the singular presence of a mood disturbance (i.e., without the presence of an eating disorder) is also strongly associated with parental conflict and family incohesiveness. Finally, not only are
females with an eating disorder and a concurrent mood disturbance likely to report that their parents are more hostile and attacking towards them, but they themselves are more likely to report being hostile and attacking towards their parents.

**Dietary Restraint in Preadolescent Girls**

In a review of the literature, Bushman (1993) reported that several factors were related to dietary restraint in preadolescents. Females consistently had higher levels of dietary restraint than males. A positive correlation between weight and dietary restraint was reported by 100% of the authors for this relationship. However, several authors also reported high dietary restraint in normal- and below-normal-weight preadolescent girls.

Furthermore, a change in weight status was found to be the best predictor of whether previously identified "dieting" adolescents would one year later meet the criteria for a clinical or subclinical eating disorder. Heavier high-restraint girls also reported consuming less energy throughout the day than other girls. A large body-size perception and low body-esteem also were more characteristic of high-restraint girls.

Negative reactions to dietary violation were more prominent in high-restraint than low-restraint girls. High-restraint girls reported feeling upset or fatter after breaking their diet. In addition, they were more likely to skip a meal, fast the next day, or binge-eat more often than low-restraint girls. In fact, the level of reported dietary restraint was positively related to the number of severe bulimic behaviors reported.

One study by Hill, Rogers, and Blundell (1989) addressed counterregulation (i.e., overeating after a period of food restriction) among high-restraint girls. High-restraint girls consumed more biscuits after imagining eating highly palatable food than low-restraint subjects. For high- and low-restraint subjects in the control condition, no statistically significant difference in mean grams consumed was reported.
In conclusion, there appears to be no single predictor of dietary restraint in preadolescent girls. However, it is apparent that these girls report a higher prevalence of dietary restraint than males. In addition, heavier girls are more likely to report higher levels of dietary restraint than normal- or below-weight girls although high-dietary restraint has also been reported in these weight groups as well.

Comparisons Between Mothers' Eating Behavior and Attitudes and Daughters' Eating Behavior and Attitudes

To date, authors of three studies have compared mothers' and daughters' self-report eating behaviors and attitudes. The following dependent variables were measured: (a) scores on the Family Adaptability and Cohesion Evaluation Scale III (FACES-III); (b) scores on the Eating Disorder Inventory (EDI) subscales; (c) responses to a self-report questionnaire inquiring about weight, height, diet history, and attractiveness; (d) mean scores on the Eating Attitudes Test (EAT); (e) mean scores on the Restraint Scale; (f) mean scores on the Eating Patterns Questionnaire (EPQ); and (g) mean scores on the Bulimia Test Revised (BULIT-R). The following summary for the studies is organized by the types of measurement used. Group differences are reported in terms of SMDs.

Pike and Rodin (1991) compared 39 daughters identified as disordered eaters (DED), their mothers (MDED), and 38 daughters identified as noneating disordered (NDED) and their mothers (MNEDD) on a variety of measures. All of the daughters were high-school aged with the mean age of the girls at 16 years. One of the measures was the FACES-III. The mean score on the FACES-III for each of the four groups (i.e., DED, MEDD, NDED, and MNEDD) was compared with the mean score for each of the other groups. The authors reported that there were no statistically significant differences between the mean scores for the two groups of mothers (MEDD versus MNEDD) for
current family adaptability (SMD = .03), current family cohesion (SMD = -.42), ideal family cohesion (SMD = .08), ideal family adaptability (SMD = .59), or satisfaction of family adaptability (SMD = -.43). The mean contrasts for the two groups of daughters (DED versus NDED) were similar in magnitude (SMDs = .31, -.36, .26, .16, -.02, respectively). The authors did report a statistically significant difference between the means for the two groups of mothers for satisfaction with family cohesion (SMD = -.57). Here, mothers with daughters identified as disordered eaters indicated a desire for significantly more family cohesion than they experienced, as compared to the control mothers. A similar statistically significant finding was obtained for the two groups of daughters (SMD = -.52).

The mean EDI scores of the MEDD and MNEDD groups were also compared by Pike and Rodin (1991). The authors reported a statistically significant difference between the mean scores for the two groups of mothers (SMD = .49). As expected, the MEDD group indicated more eating disorder symptoms than did the MNEDD group.

Additionally, Pike and Rodin (1991) compared responses of subjects in the MEDD and MNEDD groups on a self-report questionnaire pertaining to weight, height, diet history, and attractiveness. The authors reported that a high percentage of mothers from both groups had dieted (90% and 79%, respectively). However, the mothers of daughters with disordered eating indicated that they began dieting at a significantly younger mean age than did mothers of the nondisordered group (SMD = -.66). There were no statistically significant differences between the mean scores for the two groups of mothers for the current Body Mass Index, the largest amount of weight ever lost, or the amount of weight they currently wanted to lose. However, statistically significant differences were found between the mean scores for the MEDD and MNEDD groups with regard to how much weight they thought their daughters should lose (Pike & Rodin,
1991). Mothers with disordered eating daughters thought their daughters should lose more weight ($M = 12.1$ lb, $SD = 15.8$), than did mothers with nondisordered eating daughters ($M = -1.13$ lb, $SD = 5.85$; $SMD = 1.13$). Pike and Rodin also reported that mothers' mean rating of their daughters' attractiveness was significantly lower for the DED group than for the NDED group ($SMD = -0.53$).

Hill et al. (1990) compared mothers' and daughters' mean scores on the EAT. The daughters in this study were 9 to 11 years old (mean age of 10 years). The authors reported that there was no statistically significant correlation between mothers' and daughters' EAT scores ($r_{[18]} = .35$). However, a statistically significant, positive correlation was found between the daughters' scores and mothers' scores on the Dietary Restraint Scale ($r = .68, p < .01$). Bushman (1993), comparing mothers and daughters (between 11 and 13 years of age), did not find a similar relationship between mothers' and daughters' scores on the Revised Dietary Restraint Scale ($r = .16$, NS; $r^2 = .03$). A statistically significant, but also small positive relationship was found on the BULIT-R for the same mothers and daughters ($r = .317, p < .001$).

Hill et al. (1990) compared self-reported eating patterns of high-restrained daughters and their mothers with those of low-restrained daughters and their mothers. However, these authors reported no specific group statistics. They did indicate that the groups differed significantly in terms of the degree to which they attributed eating to negative mood states. High-restrained daughters and their mothers both attributed eating to boredom or being upset more frequently than low-restrained daughters and their mothers. No statistically significant differences were noted between the two groups' mean scores for behaviors such as rate of eating or frequency of eating all of the food on one's plate.
In summary, a number of authors have noted that disordered eating patterns seem to "run in families," and may be learned. The findings from the few studies that have been published to date suggest that mothers and daughters report similar eating behaviors and attitudes. Similarities were noted in the amount of self-report dietary restraint, emotional eating, and the desire for more family cohesion. Furthermore, the research suggested that mothers with daughters with disturbed eating (MEDD) are more critical of their daughters' physical appearance than mothers with daughters without disturbed eating (MNEEDD). Mothers in the MEDD group were also noted to experience more eating disorder symptoms themselves than did mothers in the MNEEDD group.

One major weakness of the published research to date is that studies have relied exclusively on self-report by mothers and daughters. No study to date has investigated whether mothers' and daughters' self-report symptomatology might be evident in an actual eating situation.

Given the absence of information regarding mothers' and daughters' actual eating behaviors in the literature, the purpose of the present study was to expand current knowledge about shared eating behaviors and attitudes of mothers and daughters. Behaviors that have been associated with the development of bulimia nervosa (i.e., dietary restraint and binge eating) were assessed intergenerationally with preadolescent daughters and their mothers. Self-report data measuring the level of dietary restraint and binge tendencies of mothers and daughters were compared. Also, the self-report data were correlated with eating behaviors of the mothers and daughters in a contrived ice cream taste-test.

Research Hypotheses

The main relationships considered in this study are displayed in Figure 1. The primary purposes of this research were to investigate whether there is a relationship
between mothers' binge eating tendencies and (a) daughter's tendency to overeat and (b) whether daughters' degree of (self-reported) dietary restraint (pattern of food restriction) relates to actual overeating tendencies. Specifically, what is the magnitude and direction of the correlation between the daughters' reported level of dietary restraint and the amount of ice cream consumed in the context of a contrived "taste-test" (designed to elicit overeating in binge-prone people)?

The following research hypotheses guided this study. The hypotheses parallel the convention that in medical and epidemiological research, a correlation of $r > .25$ and an effect size of .25 or greater are often practically meaningful (Guilford, 1965).

1. There will be a meaningful positive relationship between the mothers' dietary-restraint and daughters' dietary-restraint scores on the Restraint Scale. There will also
be a meaningful positive correlation between mothers' and daughters' scores on the BULIT-R total score.

2. There will be a meaningful positive relationship between mothers' binge eating tendencies (scores on the BULIT-R) and the number of grams of ice cream eaten by daughters in a contrived laboratory setting.

3. There will be a meaningful positive relationship between daughters' scores on the Restraint Scale and the number of grams of ice cream consumed in an eating situation.

4. There will be a meaningful positive relationship between the number of grams of ice cream consumed by mothers and the number of grams of ice cream consumed by daughters.

5. There will be a meaningful positive relationship between the rate of eating by mothers and daughters. There will also be a meaningful positive relationship between the rate of eating by mothers and daughters and their respective scores on indices of binge eating.

6. There will be a meaningful positive relationship between mothers' and daughters' scores on the ABI Bingeing, Purging, Negative Mood, Anorexia, and Parent subscale scores. Furthermore, there will be a meaningful positive relationship between mothers' and daughters' respective scores on the ABI Binge subscale and the amount of ice cream eaten.
CHAPTER IV

METHOD

The major purpose of this study was to investigate the similarities between mothers' and preadolescent daughters' abnormal dieting and eating patterns. Relationships between mothers' and daughters' dieting and eating behaviors were investigated through the use of self-report data and actual eating behavior observed during an ice cream taste-test. The following chapter outlines the major activities involved in this study.

Population and Sample

The accessible population of the present study included mothers and daughters residing in Logan, Utah, or in the surrounding Cache Valley. The sample was comprised of mothers who both would and would not meet published cut-off scores for binge eating on the Bulimia Test-R (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991) and who had daughters between the ages of 9 and 11 years old.

Potential subjects were identified by use of the local middle-school directories. Mothers' of sixth-grade females were contacted via telephone and asked if they and their daughters would be interested in participating in a study considering the relationship between mothers' and daughters' eating and dieting behaviors. If the mothers consented to participate, an undergraduate female research assistant went to their home and assisted the mother and daughter in completing the BULIT-R (see Appendix A) and the Dietary Restraint Scale-Revised (hereafter referred to as the Restraint Scale) (see Appendix B). To assure the clarity of the questions for the daughters, some minor grammar changes were made on the inventories completed by the daughters (see
Appendixes A and B). If the mother indicated her sixth-grade daughter was adopted, they were not included in the study.

If either the mother or daughter had difficulty understanding either the directions or purpose of an item, she was instructed to ask the research assistant for clarity. All subjects were encouraged not to discuss their answers with one another.

A total of 190 mothers was contacted via telephone of which 44 (23%) declined to participate. This left 146 (77%) mothers and daughters who consented to participate and then completed the self-report questionnaires. The criterion for inclusion in the present study was mothers' scores on the BULIT-R total. Mothers were chosen for inclusion in the present study by selecting an equal number of mothers who scored within three arbitrarily set ranges (i.e., > 70, between 37 and 69, and ≤ 36). The existing sample had few mothers who were high binge prone so an additional three subjects were added at the high end of the continuum through a second round of contacting mothers of daughters in the sixth grade. Since a new school year had started at this stage of the study, a letter requesting participation in a study investigating similarities in mothers' and daughters' eating and dieting behavior was mailed to all mothers of sixth-grade daughters listed in the new school directories. Mothers interested in participating were asked to telephone the primary researcher and upon doing so were scheduled to have a female undergraduate research assistant come to their home to complete the self-report questionnaires in the same manner described above. From this round of subject recruitment, three mothers scored greater than 69 on the BULIT-R and were asked to participate in the ice cream taste-test in the manner described below.

Mothers and daughters included in the present study were asked (via telephone) to participate in an "ice cream taste-test." A $15 incentive was offered to encourage
participation. If the mothers and their daughters agreed to participate, they were scheduled to come to the Psychology Community Clinic at Utah State University at either 4:00 or 5:00 p.m. on a day that was convenient for them. They were then given directions to the clinic and asked not to eat anything for at least 2 hours prior to their appointment.

Sons were not of interest in this study because it has been shown that up to 90% of individuals with eating disorders are female (Striegel-Moore et al., 1986). Selection of the particular age range of daughters was based on research demonstrating that female children begin to report significant concern between the ages of 9 and 12 about body image and weight (Stein & Reichert, 1990).

Thirty-five mother/daughter dyads were included in the study. However, the actual sample size used in each analysis varied slightly due to missing data on some variables for a few subjects.

Daughters' mean age was 12.3 years (SD = .8) with a range of 10 to 14. Only one daughter reported being 10 years of age, and one reported being 14. The mean latency between date of completion of the self-report questionnaires and the completion of the "taste-test" was 2.4 months. The minimum latency was .5 months, and the maximum latency was 6 months.

Procedures

Several procedures were used in the taste-test protocol to control for extraneous variables and to minimize the effects of eating in an unnatural laboratory setting (e.g., anxiety that the exact amount eaten might be detected by the experimenter). First, as was noted in the literature review, high restrainers purportedly tend to overeat when they believe they have previously consumed a high-calorie preload regardless of the actual caloric content (Polivy, 1976; Spencer & Fremouw, 1979; Woody, Costanzo, & Liefer, 1981). Thus, all of the mothers and daughters consumed a milkshake (preload) prior to
the ice cream taste-test procedure. Past research has shown that this procedure increases the likelihood that high-restraint subjects would paradoxically overeat.

Second, Merola, Stein, and Beckwith (in press) have shown that subjects are less likely to restrain from eating if they feel the amount eaten will not be detected by the experimenter. The perception of privacy was enhanced by asking subjects to purposely dispose of any ice cream remaining in their bowls into a wastebasket after the taste-test. However, the wastebasket contained a preweighed amount of melted and melting ice cream. Ostensibly, subjects perceived that the ice cream they disposed of was combined with the leftovers of many other subjects who had preceded them in the study.

Third, to ensure that all subjects had the same amount of time to eat the ice cream, subjects were required to remain in the eating laboratory for a 15-minute period.

Laboratory taste-test procedures. Upon arrival at the laboratory (Psychology Community Clinic, USU), consent forms and Physical Status Rating forms were completed independently by both the mother and daughter (Appendix C). The consent form alerted each participant to the fact that some information regarding the nature of the study would not be disclosed until after completion of the study, and that they were free to withdraw participation at any time during the study.

On the Physical Status Rating form, subjects were asked to rate several questions pertaining to hunger using the following six-point rating scale: (a) very satisfied; no desire to eat at all (score 1); (b) somewhat satisfied; but no desire to eat (score 2); (c) moderately satisfied; balanced between satisfaction and the desire to eat (score 3); (d) somewhat unsatisfied; mild desire to eat (score 4); (e) moderately unsatisfied; moderate desire to eat (score 5); and (f) very unsatisfied: strong desire to eat (score 6).

After completing the consent form and Physical Status Rating form, mothers and daughters were randomly assigned to an alternating sequence regarding who completed
the experiment first. Specifically, while one member of a dyad completed the
experiment, the other was asked to wait in a nearby waiting room.

The subject was taken to the experimental room equipped with a table, chair,
taped instructions, a clock, and a concealed video-camera. Each subject was video-
taped as a means of measuring her rate of eating (i.e., bites per minute). The subject
was presented with either a 10-oz or 8-oz milkshake depending on whether it was the
mother or daughter, respectively. The recipe for the milkshake was one cup vanilla ice
cream (260 kcals) blended with one cup of 2% milk (120 kcals) and two tablespoons
chocolate flavoring (Hershey's syrup).

The experimenter instructed the subject to listen to tape-recorded instructions and
asked her to return to the waiting room after consuming the milk shake. The tape-
recorded instructions were then played for the subject as she followed along on a written
version of the same instructions. The instructions informed subjects that the milkshake
contained the Kcal equivalent of a normal meal (about 800 Kcals). The actual calorie
value of the milkshake was approximately 263 kilocalories (Kcals). As noted previously,
the purpose of this manipulation was to increase the likelihood that subjects would
assume that they had exceeded their calorie allotment for the day. When the recording
ended, the experimenter left the experimental room.

After the subjects finished the milkshake and returned to the waiting room, the
experimenter prepared the experimental room for the taste-test. The experimenter
placed the following items on the table: (a) typed instructions that gave the same
instructions as the taped message and were used to follow along with the taped
message; (b) one bowl (225 g net weight) each of vanilla, chocolate, and strawberry ice
cream; (c) three flavor-rating forms, one for each flavor (see Appendix D); (d) one
preference rating form for comparing all flavors in terms of sweetness, creaminess,
flavor, and overall preference (see Appendix D); (e) one 16-oz glass of cold water; (f) one stainless steel teaspoon; and (g) one paper napkin. The experimenter also placed a wastebasket lined with a plastic trash bag containing preweighed, melted, and melting ice cream next to the table.

The subject was taken to the experimental room. Additional tape-recorded instructions asked the subjects to taste and rate the samples of ice cream, one at a time, in the specified order (vanilla, chocolate, strawberry). They were invited to drink water, as desired, between samples. It was emphasized in the instructions that careful ratings were important and that the subject should eat as much of each flavor as necessary to make accurate ratings. In actuality, all of these ratings were irrelevant to the purpose of the study; the procedures served to encourage consumption of ice cream.

Subjects were also invited to eat any remaining ice cream, as it would be disposed of anyway. The subjects were asked to throw away any remaining ice cream in their bowls into the wastebasket when they were finished. Subjects were told to remain in the room for 15 minutes, after which time the research assistant would come to get them.

Subjects' weight (in grams) and height (in inches) were then measured by the experimenter. Subjects' shoes were removed for the weight and height measurements. The subject was taken back to the waiting room to complete the ABI (see Appendix F).

All of the remaining ice cream in the three bowls was emptied into the trash bag in the taste-test room using a flexible rubber spatula as a squeegee. Next, the trash bag was reweighed, and the net weight was recorded by subtracting the pretest weight (of melting and melted ice cream) from the posttest weight of the bag. On approximately 10
to 15% of the weighings, a second research assistant verified the weight of the bag to enhance the reliability of the measurement. Interrater agreement was 100%.

Sanitary laboratory and eating conditions were maintained by washing all utensils before and after each subject in a detergent-chlorine bleach solution. All ice cream was kept in a freezer maintained at 0 degrees Fahrenheit or colder.

When all of the subjects had completed the laboratory experiment, the experimenter contacted each mother/daughter dyad by letter and informed them of scheduled debriefing sessions. Each subject was encouraged to attend this session. Since no subjects came to the debriefing sessions, a letter describing all of the procedures of the study that were initially not revealed was sent to all of the subjects (see Appendix E).

Data and Instrumentation

Table 1 summarizes internal reliability coefficients and test-retest coefficients for the BULIT-R, Restraint Scale, and the ABI subscales. The following section outlines the available validity and reliability data on the BULIT-R, Restraint Scale, and the ABI in more detail. It is noted that due to the lack of validity and reliability data on the BULIT-R, Restraint Scale, and the ABI subscales with preadolescent daughters, Cronbach coefficients will be calculated for each of the inventories and subscales (for mothers and daughters) used in the analysis section of this paper.

Bulimia Test-Revised. Mothers and daughters who participated in the study completed the Bulimia Test-Revised (BULIT-R; see Appendix A). One goal of the present experiment was to include a range of binge-eating subjects (i.e., the subjects ranged from low-binge eating to mothers with more severe bulimia nervosa) by including an equal number of mothers who scored low, medium, and high on the BULIT-R total.
Table 1

Reliability Coefficients for Self-Report Indices

<table>
<thead>
<tr>
<th></th>
<th>Test-Retest</th>
<th>Cronbach's Alpha</th>
<th>Relevant Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td>.95</td>
<td>.97</td>
<td>2,5</td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td>.95</td>
<td>.82</td>
<td>1,3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.86 - .79</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.83 - .50</td>
<td></td>
</tr>
<tr>
<td>ABI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Mood</td>
<td>.67</td>
<td>.91</td>
<td>6</td>
</tr>
<tr>
<td>Parent</td>
<td>.68</td>
<td>.64</td>
<td>6</td>
</tr>
<tr>
<td>Purge</td>
<td>.65</td>
<td>.90</td>
<td>4,6</td>
</tr>
<tr>
<td>Binge</td>
<td>.66</td>
<td>.94</td>
<td>4,6</td>
</tr>
<tr>
<td>Anorexia</td>
<td>.80</td>
<td>.88</td>
<td>6</td>
</tr>
</tbody>
</table>

Note. BULIT-R = Bulimia Test Revised, Total Score; Restraint = Dietary Restraint Scale Revised, Total Score; Combined obese and normal weight subjects; Neg. Mood = Negative Mood; ABI = Anorexia Bulimia Inventory.

The BULIT-R is a 28-item, self-report, multiple-choice scale developed to measure bulimia nervosa based on DSM-III-R criteria. It uses a five-point, Likert-scale format, allowing subjects to obtain scores ranging from 28 to 140 points. All of the available descriptive statistics on the BULIT-R are based on college and school populations.

In cross-validation studies in which a cutoff score of 104 on the BULIT-R was used to designate likely Bulimia Nervosa cases, researchers were able to adequately discriminate bulimic from nonbulimic cases, both in a clinical and nonclinical sample (Thelen et al., 1991). To reduce the number of false-negative cases of bulimia nervosa, it has been shown that a cut-off score of 85 reduces the number of false negative cases of bulimia nervosa to only 1 in 37 (Thelen et al., 1991). The test-retest (2-month interval) reliability coefficient for the BULIT-R is excellent ($r = .95$; Thelen et al., 1991). Likewise, internal consistency has been reported to be high (Cronbach's alpha coefficient = .97; Thelen et al., 1991). Excellent correspondence between the revised
BULIT-R and both the original BULIT and Gormally's Binge Scale (Hawkins & Clement, 1980) has been reported. Specifically, a strong Pearson product-moment correlation ($r = .85$) was reported between scores on the BULIT-R and the Gormally's Binge Scale, indicating that the two scales are measuring similar constructs (Thelen et al., 1991). Also, a Pearson product-moment correlation coefficient of .99 was found between score on the BULIT-R and the original BULIT, suggesting that the measures are almost completely redundant.

**The Restraint Scale.** The Restraint Scale (Appendix B) is a 10-item, self-report, multiple-choice scale developed to identify those chronic dieters who tend to paradoxically overeat after a period of restrictive dieting (Polivy, 1976). Paradoxical overeating is most likely to occur when high restrainers are placed in situations of stress, dysphoria, or when they perceive that they have ruined their diet for the day (Polivy, 1976). Investigators studying the Restraint Scale suggest that it is comprised of two factors, Concern for Dieting (CD) and Weight Fluctuations (WF). The average correlation between the two factors is $r = .48$, $SD = .19$ (Heatherton, Herman, Polivy, King, & McGree, 1988).

One criticism of the Restraint Scale is that overweight individuals consistently score higher on the scale than normal-weight individuals (Heatherton et al., 1988). However, Heatherton et al. (1988) indicated that it is unknown whether this difference is due to the overweight individual's concern for dieting, greater fluctuations in weight, or both. The difference in scores between normal-weight and overweight individuals has been reported to influence other psychometric properties of the Restraint Scale. Allison, Kalinsky, and Gorman (1992) reported a 2-week interval test-retest correlation coefficient of .95 and an internal consistency coefficient of .82 with a combined sample of 902 obese and nonobese undergraduate students. Additional internal consistency
coefficients were calculated for obese subjects (Cronbach's alpha = .72) and nonobese subjects (Cronbach's alpha = .83). Ruderman (1986) summarized the findings from studies that focused on the internal consistency of the Restraint Scale. She reported that in normal-weight samples, the scale appears to have adequate internal consistency (alpha coefficient ranging from .86 to .79). However, adequate internal consistency was found only for obese individuals who were dieting (alpha coefficient of .83), but not for nondieters (alpha coefficient of .50). Because the sample for the present study likely included obese dieting and nondieting mothers, the internal consistency for scores on the Restraint Scale was expected to be low for the nondieting subjects. Although the low reliability of scores can obscure true relationships, reliability coefficients of .70 are typically taken to be of sufficient magnitude for correlational studies (Nunnally, 1978).

Anorexia Bulimia Inventory. The Anorexia Bulimia Inventory (ABI) was originally developed as a screening instrument that could also be utilized to verify diagnosis of DSM-III-R eating disorders (Stein, 1991; Appendix F). Specifically, the ABI assesses the major criteria for DSM anorexia nervosa and bulimia nervosa as well as frequently co-occurring problems that may affect treatment planning. To date, the ABI is the only available instrument that assesses both anorexia nervosa and bulimia nervosa symptomatology, which frequently overlap.

The ABI is a 75-item, self-report instrument that utilizes a four-point Likert scale. The instrument includes the following nine subscales: Bingeing, Anorexia, Parent Conflict, Anergia, Depressed Mood, Anxiety, Maladaptive Cognitions, Purging, and Exercise. Individual scores are computed for each of the nine subscales (see Appendix G). All subscales are comprised of at least six items.

The Bingeing subscale is comprised of 6 items and assesses specific behaviors associated with binge eating and impulse control. The Anorexia subscale has 11 items
measuring DSM diagnostic criteria for anorexia nervosa (i.e., menstrual irregularity, preoccupation with weight, social pressures to lose weight). Seven items comprise the Parent Conflict subscale, which assesses the respondents' impression of their ability to communicate with and influence their parents. The Anergia subscale contains items associated with fatigue, low energy, and difficulty completing tasks, and is comprised of seven items. Twelve items assessing depressed mood, suicide ideations, sleep pattern, and energy level are included in the Depressed Mood subscale. The Anxiety subscale (11 items) assesses symptoms associated with DSM-III-R Anxiety Disorder symptomatology (i.e., excessive rumination, physiological symptoms of anxiety). Maladaptive Cognitions is comprised of items measuring one's irrational beliefs of the benefits of weight loss (10 items). Issues relating to diet-pill use, self-induced vomiting, and laxative use are contained in the Purging subscale (6 items). The Exercise subscale is comprised of 5 items assessing the respondents' commitment to exercise, as well as excessive thoughts that guide the respondents' exercise behavior.

Consistent with convention suggesting an overlap in symptomatology and consequences in behavior (i.e, eating behavior), the Anxiety and Depression subscales were combined to create a general Negative Mood subscale, which will be used in the current study. The reliability data presented on the Negative Mood subscale in Table 1 (and discussed below) are the result of averaging the Cronbach alpha coefficients and the test-retest correlation coefficients for each of the Anxiety and the Depression subscales. Although this is not evidence for the reliability of the Negative Mood subscales, by combining the two subscales, twice the number of items is present in the combined subscale. An increase in the number of items on a measure tends to increase the stability of the scores from that measure (Nunnally, 1978). Furthermore, the internal consistency and the stability coefficients for the two individual subscales were similar.
Thus, combining the two should not notably alter the results. To further validate the reliability of the Negative Mood subscale, Cronbach coefficients were calculated for the current sample and are reported in the Results section.

Reliability and predictive validity information are available for females ranging in age from 15 to 35. In general, the ABI has been shown to differentiate between members of eating disordered groups (i.e., Anorexia and Bulimia) and "normal" college and high-school females (Stein, 1991). Those with anorexia nervosa scored statistically significantly higher ($p < .05$) on the Anorexia subscale than those in the bulimia nervosa group and the "normal" group. Subjects in the bulimia nervosa group scored statistically significantly higher ($p < .05$) on the Bingeing subscale than did those in the other groups. Furthermore, Stein (1991) demonstrated that scores on the ABI correlated with actual amount eaten in a (contrived) ice cream "taste-test." Specifically, subjects scoring high on the Anorexia subscale ate statistically significantly less ice cream than subjects scoring low on this subscale ($\text{SMD} = -.78$). Conversely, high scorers on the Bingeing subscale also consumed (statistically) significantly more ice cream in a research condition conducive to overeating among binge-prone people (see Procedures for a description of this condition) than those with low scores on the Bingeing subscale ($p < .02$).

Stein (1995) also examined the relationship between the ABI Anorexia and Purging subscales, and memory/perceptual bias for food-related stimuli. Undergraduate subjects were asked to discriminate several food- and nonfood-related slides as either "new" (never seen before) or "old" (seen in a previous slide show). A statistically significant correlation was found between subjects' ABI Anorexia and Purging subscales, and the frequency of errors in designating new food slides (never seen before) as familiar. This result was interpreted as an overdetermined perceptual bias error often
consistent with food preoccupations frequently observed in individuals with food restriction or purging symptoms in eating disorders.

Stein (1991) reported that scores on the ABI Bingeing subscale are moderately correlated with scores on the Eating Disorder Inventory (EDI) Bulimia subscale ($r = .71$). As expected, scores for the ABI Anorexia subscale also correlated minimally with scores for the EDI Bulimia subscale ($r = .23$). These findings demonstrate that distinct eating-disorder symptomatology is measured by these subscales. Scores for several other ABI and EDI subscales that measure constructs possessing some degree of overlap were also moderately to highly correlated. Scores on the ABI have also been found to be more accurate predictors of the severity of eating disorder symptomatology than those for the EDI (Stein, 1991). Test-retest data for a 7-week interval suggested that the ABI subscales have adequate test-retest reliability (see Table 1). Also, internal consistency (Cronbach's alpha) coefficients ranged from .64 to .94 (see Table 1). Due to the low internal consistency of the Parent Conflict subscale (Cronbach's alpha = .64), the results of analyses involving this subscale will be interpreted with caution. Furthermore, it is noted that the test-retest correlation coefficients are not strong; however, this may be attributed to the 7-week interval and fluctuations that might be expected to occur over time. For this reason, the ABI was administered after completing the taste test, rather than at the same time as other self-report instruments (during the first stage of this study).

Coding of videotapes. Two undergraduate research assistants viewed videotapes of each subject's ice cream "taste-test" session. The assistants conjointly recorded the number of bites per minute during the taste-test, as well as the ad libitum eating period (see Appendix H). Each tape was coded twice. For each coding trial, one assistant monitored a stopwatch while the other coder counted and recorded the number of bites
consumed. Then the tape was rewound and the coders switched roles. If there were any discrepancies in the frequency counts between the two codings, the tape was recoded (with the assistants switching roles) until 100% agreement was reached.

The stopwatch was started at the time the coders heard and/or saw the door close behind the research assistant (who had been explaining the procedures to the subject). When the subject had taken her first bite, the amount of time that had elapsed was recorded as the eating latency. Bites-per-minute was continuously monitored and recorded from that point in time. Specifically, the first coder began to record bites-per-minute, while the second coder indicated when a new minute had begun.

A "bite" was defined as any time the subject placed the spoon of ice cream in her mouth, and it was evident she was swallowing at least part of the ice cream. When a subject ate less than the full amount of ice cream on the spoon during the first bite, but finished eating the remainder during the second bite, two bites were recorded. The coding procedure continued until the subject had completed all of her ice cream taste ratings. Completion of the taste-test ratings was evident when the subject placed the papers in one pile at the top or side of the table. This designated the end of the "taste-test" period and the beginning of "free-eating" period.

Free-eating was defined as any ice cream consumption occurring after the subject placed the rating forms aside. When the free-eating period began, the coders again recorded bites-per-minute.

The free-eating period ended when the subject emptied the remaining ice cream from all three bowls into the trash can (as per instructions). At this point, the coders noted the total elapsed time from latency. The coders continued to monitor the remaining minutes of the tape and subjectively recorded any atypical observations of behaviors (e.g., licking of bowls and sampling the ice cream in the garbage).
Data Analysis

Cronbach coefficients were calculated for all inventories and subscales used in the analysis section. Means, standard deviations, and ranges of scores were calculated for all dependent variables used in this study. The descriptive statistics for mothers’ and daughters’ scores on the BULIT-R, Restraint Scale, BMI, and the ABI Negative Mood, Parent, Purge, Bingeing, and Anorexia subscales are listed in table format, while the descriptive data for hunger rating, acknowledgment of snacking prior to the taste-test, rate of eating, and grams of ice cream consumed are discussed in narrative form.

Scores on the BULIT-R, the Restraint Scale, the ABI subscales (i.e., Negative Mood, Parent, Purge, Bingeing, and Anorexia), grams of ice cream consumed, and rate of eating are all continuous variables. Therefore, Pearson product-moment correlation coefficients were used to calculate the magnitude of the relationships outlined in hypotheses 1-6. The Pearson product-moment correlation was selected for use because it is the most commonly used bivariate correlational technique and it yields the $r$ with the smallest standard error.

Practical significance of the relationships for all hypotheses was assessed by calculating the coefficient of determination ($r^2$) as a means of estimating the proportion of variance explained by the scores on the variables.

Supplementary Analyses

Predicting grams consumed. Consideration of the combinations of variables that best predicted grams of ice consumed by mothers and daughters was not included in the main analyses. However, it was of interest to determine which linear combination of variables included in the present study best predicted the grams of ice cream consumed by subjects. Stepwise regression analyses were completed using scores from the
following measures: (a) BMI, (b) BULIT-R score, (c) Restraint Score, (d) ABI Parent subscale score, and (e) ABI Negative Mood subscale scores.

One caution noted in the use of the regression analysis is that the present study contains fewer subjects than is desirable for a regression equation involving five predictor variables. Borg and Gall (1989) suggested that for each predictor variable used in the equation, an additional 15 subjects should be included in the sample. Using this guideline, the current study should have had scores from 75 subjects. Therefore, the findings from the multiple-regression analysis will be interpreted with caution.

**Validity of Dietary Restraint Scale-Revised (Restraint Scale).** Because there are concerns about the validity of the Restraint Scale in the literature (Charnock, 1989; Johnson, Lake, & Mahan, 1983), results of the present study were reanalyzed using only the Diet Concerns subscale, which is the most dominant factor of the Restraint Scale. Pearson product-moment correlation coefficients were again calculated between the mothers' and daughters' scores on the Diet Concern subscale and their scores on the BULIT-R. The implications of the findings were discussed.

**Summary**

The main activities completed in the present study were (a) identifying and obtaining accessible preadolescent daughters and mothers; (b) completion of the BULIT-R and Restraint Scales; (c) identifying and obtaining the sample that would participate in the laboratory taste-test; (d) completion of the taste-test, measuring subjects for height and weight, completion of the ABI and the Physical Status Rating form; (e) coding of the videotapes used in the laboratory taste-test; and (f) data analyses. The following chapter outlines the results from the data analyses.
CHAPTER V
RESULTS

Cross-generational eating and dieting behaviors of mothers and their preadolescent daughters were the primary focus of this study. Of particular interest was whether self-report data would correlate highly with actual eating in a laboratory taste-test. Several self-report measures of eating and dieting behavior were included in the study. Focus was given to those instruments pertaining to: (a) bingeing behavior (BULIT-R and the ABI Bingeing and Purging subscales), (b) dietary restraint (Restraint Scale), (c) perception of parental relationship (ABI Parent subscale), and (d) negative mood states (ABI Parent subscale). Relationships among the scores on the self-report data themselves and with the grams of ice cream consumed in the taste-test were investigated and are reported in this chapter.

Preliminary Analysis

Cronbach correlation coefficients were calculated for the BULIT-R total, Restraint Scale total, the ABI Negative Mood, Parent, Bingeing, Purge, and Anorexia subscales (see Table 2). Since mothers' Parent and daughters' Anorexia subscales yielded Cronbach coefficients below the recommended .70 cut-off (Nunnally, 1978) for correlational studies, results involving these subscales will be interpreted with caution.

Table 2

<table>
<thead>
<tr>
<th>Cronbach's Alpha Coefficients for Mother and Daughter Indices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>BULIT-R</td>
</tr>
<tr>
<td>Mother</td>
</tr>
<tr>
<td>Daughter</td>
</tr>
</tbody>
</table>

Note: BULIT-R = Bulimia Test Revised Total Score; Restraint = Dietary Restraint Scale Revised; Mood = ABI Negative Mood

Sample Size N: Mothers = 30, Daughters = 33

* Anorexia Bulimia Inventory Subscale
Descriptive statistics for mothers' and daughters' scores on the BULIT-R, Restraint Scale, Body Mass Index (BMI), the ABI Negative Mood, Parent, Purge, Bingeing, and Anorexia subscales are listed in Table 3. Since one-half of the mothers' BMI met criteria for either being overweight or obese (Cox, 1995), the results of all analyses involving mothers' scores on the Restraint Scale will be interpreted with caution due to the low

Table 3

Means, Standard Deviations, Maximum, and Minimum Scores for Mothers' and Daughters' Indices

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
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<td></td>
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<td></td>
</tr>
<tr>
<td>BULIT-R</td>
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<td>23.83</td>
<td>108.00</td>
<td>30.00</td>
</tr>
<tr>
<td>Restraint</td>
<td>33</td>
<td>17.88</td>
<td>6.26</td>
<td>29.00</td>
<td>7.00</td>
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<tr>
<td>ABI</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Negative Mood</td>
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<td>1.86</td>
<td>.49</td>
<td>2.91</td>
<td>1.04</td>
</tr>
<tr>
<td>Parent</td>
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<td>.49</td>
<td>2.29</td>
<td>.29</td>
</tr>
<tr>
<td>Purge</td>
<td>35</td>
<td>.15</td>
<td>.25</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>Binge</td>
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<td>.85</td>
<td>.76</td>
<td>2.83</td>
<td>.00</td>
</tr>
<tr>
<td>Anorexia</td>
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<td>.45</td>
<td>1.70</td>
<td>.00</td>
</tr>
<tr>
<td>BMI</td>
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<td>28.03</td>
<td>7.58</td>
<td>44.85</td>
<td>18.67</td>
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<tr>
<td><strong>Daughters</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>BULIT-R</td>
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<td>16.01</td>
<td>82.00</td>
<td>31.00</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Negative Mood</td>
<td>33</td>
<td>.86</td>
<td>.44</td>
<td>2.00</td>
<td>.04</td>
</tr>
<tr>
<td>Parent</td>
<td>34</td>
<td>.94</td>
<td>.48</td>
<td>1.86</td>
<td>.00</td>
</tr>
<tr>
<td>Purge</td>
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<td>.16</td>
<td>.33</td>
<td>1.50</td>
<td>.00</td>
</tr>
<tr>
<td>Binge</td>
<td>35</td>
<td>.37</td>
<td>.47</td>
<td>1.83</td>
<td>.00</td>
</tr>
<tr>
<td>Anorexia</td>
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<td>.95</td>
<td>3.27</td>
<td>.00</td>
</tr>
<tr>
<td>BMI</td>
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<td>20.07</td>
<td>3.74</td>
<td>29.66</td>
<td>14.27</td>
</tr>
</tbody>
</table>
reliability of this measure with obese women. Furthermore, it is noted that a basal effect on the ABI subscales may influence attenuation of coefficients.

To better understand extraneous factors that might influence subjects' eating behavior in the laboratory, several preliminary analyses were completed. First, subjects' ratings of hunger, latency of time since last meal, and snacking behavior were considered.

Mothers' mean hunger rating at the time of the taste-test was 3.7 with a SD = 1.2. This indicates that most mothers were experiencing either a mild or moderate desire to eat at the time of the taste-test. Daughters' mean hunger rating was 4.0 (SD = 1.2), suggesting a moderate desire to eat by most daughters at the time of the taste test. Mothers' mean latency between completion of the taste-test and the time of their last meal was 287 minutes (SD = 154 minutes). Daughters' mean latency between completion of the taste test and the time of their last meal was 291 minutes (SD = 150).

Seventeen of the 35 mothers (49%) acknowledged having had a snack between their last meal and the time of the taste-test. The type of foods they reported eating varied from one-half piece of celery to three cookies and one-quarter cup of peanuts. Fifteen daughters (43%) reported snacking prior to the taste test. Daughters' snack foods ranged from one spaghetti noodle to a Ding Dong and milk.

All mothers and daughters denied allergies to dairy products; sugar; and chocolate, vanilla, and/or strawberry flavors. Furthermore, all daughters and mothers answered "no" to the question: "Are you diabetic?" All daughters also denied taking medications that could interfere with their mood and/or appetite.

In summary, mothers and daughters reported at least a mild, and often moderate, desire to eat at the time of the taste-test. Almost 3 hours had passed between the time most mothers and daughters had consumed a meal, and when they completed of the
taste-test. Finally, snacking behavior between the last meal and completion of the taste-test was minimal for both mothers and daughters.

**Hunger ratings, snacking, and relationships with self-report scores and grams eaten.** Pearson product-moment correlation coefficients were computed to investigate the relationship between hunger level and snacking (prior to the taste-test) with scores from the self-report indices, BMI, and grams eaten. These analyses were completed to determine if there was a need to control for hunger rating and/or snacking behavior in the remainder of the analyses. As highlighted in Table 4, the results of these analyses showed no relationship between mothers' and daughters' hunger rating and their scores on the self-report indices (i.e., BULIT-R, Restraint Scale, and the ABI Bingeing, Purging, Parent, Negative Mood, and Anorexia scales), BMI, and grams of ice cream consumed that differed significantly from zero. Furthermore, the relationship between mothers' and daughters' snacking behaviors and the previously mentioned self-report indices, BMI, and grams of ice cream consumed also did not differ significantly from zero. Therefore, neither hunger rating nor snacking behavior was controlled for in the remaining analyses.

**Noteworthy Relationships Between Individual Indices**

Hypothesis one proposed that a meaningful, positive relationship would be found between mothers' and daughters' scores on the BULIT-R and the Restraint Scales. Furthermore, the first part of hypothesis six was that a meaningful, positive relationship would exist between mothers' and daughters' scores on the ABI Bingeing, Purging, Negative Mood, Anorexia, and Parent subscale scores. These relationships were investigated using Pearson product-moment correlations coefficients (see Table 5).
Table 4
Pearson Product-Moment Correlation Coefficients Between Hunger and Snacking Ratings and Scores on Other Mothers' and Daughters' Indices

<table>
<thead>
<tr>
<th>Indices</th>
<th>Hunger&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Snack&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.11</td>
<td>-.29</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.07</td>
<td>.13</td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.07</td>
<td>-.25</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.02</td>
<td>.19</td>
</tr>
<tr>
<td>Parent&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.12</td>
<td>.22</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.03</td>
<td>.06</td>
</tr>
<tr>
<td>Binge&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.05</td>
<td>.02</td>
</tr>
<tr>
<td>Daughter</td>
<td>.08</td>
<td>-.07</td>
</tr>
<tr>
<td>Purge&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.11</td>
<td>.14</td>
</tr>
<tr>
<td>Daughter</td>
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<td>.25</td>
</tr>
<tr>
<td>Mood&lt;sup&gt;b&lt;/sup&gt;</td>
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<td></td>
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<tr>
<td>Mother</td>
<td>.29</td>
<td>-.16</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.09</td>
<td>.06</td>
</tr>
<tr>
<td>Anorexia&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>Daughter</td>
<td>.38</td>
<td>-.34</td>
</tr>
<tr>
<td>BMI</td>
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<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.11</td>
<td>.18</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.22</td>
<td>.27</td>
</tr>
<tr>
<td>Grams Eaten</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.28</td>
<td>.23</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.03</td>
<td>-.09</td>
</tr>
</tbody>
</table>

* Scores for all of mothers' indices were correlated with mothers' hunger and snacking scores and scores for all daughters' indices were correlated with daughters' hunger and snacking scores.

Note: Hunger = Hunger Rating, Snack = Acknowledgment of Snacking Prior to Taste-Test, BULIT-R = Bulimia Test-Revised, Restraint = Dietary Restraint Scale-Revised, BMI = Body Mass Index.

Sample Size: Mothers' N = 27, Daughters' N = 24
Table 5

Pearson Product-Moment Correlation Coefficients Between Mothers' and Daughters' Self-Report Indices

<table>
<thead>
<tr>
<th></th>
<th>Daughters</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers</td>
<td>BULIT-R</td>
<td>Restraint</td>
<td>Neg. Mood</td>
<td>Parent</td>
<td>Purge</td>
<td>Bingeing</td>
</tr>
<tr>
<td>BULIT-R</td>
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<td>.02</td>
<td>.19</td>
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<td>.26</td>
</tr>
<tr>
<td>Restraint</td>
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<td>.60***</td>
<td>.11</td>
<td>.13</td>
<td>.30</td>
<td>.43</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Neg. Mood</td>
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<td>.21</td>
<td>.34</td>
<td>.36</td>
<td>.26</td>
<td>.33</td>
</tr>
<tr>
<td>Parent</td>
<td>.52</td>
<td>.38</td>
<td>.16</td>
<td>.21</td>
<td>.24</td>
<td>.49</td>
</tr>
<tr>
<td>Purge</td>
<td>.38</td>
<td>.06</td>
<td>.35</td>
<td>.16</td>
<td>.51</td>
<td>.50</td>
</tr>
<tr>
<td>Binge</td>
<td>.58**</td>
<td>.49</td>
<td>.09</td>
<td>.25</td>
<td>.32</td>
<td>.47</td>
</tr>
<tr>
<td>Anorexia</td>
<td>.60**</td>
<td>.47</td>
<td>.38</td>
<td>.17</td>
<td>.22</td>
<td>.61*</td>
</tr>
</tbody>
</table>

Note. BULIT-R = Bulimia Test-Revised, Total Score; Restraint = Dietary Restraint Scale-Revised; Neg. Mood = Negative Mood; ABI = Anorexia Bulimia Inventory.

Sample Size: N = 20

** p ≤ .01
*** p ≤ .001

Inspection of Table 5 reveals that several statistically significant and practical relationships were found. Daughters of mothers who reported high levels of food-conflict and binge-eating behavior tended to also report high levels of these behaviors. Particularly noteworthy are the correlation coefficient describing the relationships between mothers' Dietary Restraint scores and daughters' scores on the BULIT-R Total \((r = .62, \ p < .01)\) and Restraint Scale \((r = .60, \ p < .01)\). Thirty-eight percent and 36% (respectively) of the variance are accounted for by the relationship between these variables. Also of importance here is the relationship between daughters' BULIT-R scores and mothers' ABI Bingeing scores \((r = .58, \ p < .01)\) and Anorexia scores \((r = .60, \ p < .01)\). The amount of variance explained by the relationship between these scores is 34% and 36%, respectively.
The coefficients reported in Table 5 indicate moderate positive relationships between (a) daughters' bulimia symptom/frequency/severity of eating (BULIT-R) and mothers' Dietary Restraint, Bingeing symptoms, and Anorexic symptoms; (b) daughters' and mothers' Purging (though not statistically significant); and (c) daughters' Bingeing symptoms and mothers' Purging, Bingeing, and Anorexia symptoms. Furthermore, mothers' Negative Mood appears to be positively related to daughters' reports of food conflict.

Relationships among mothers' self-report indices. Pearson product-moment correlations coefficients were calculated between mothers' scores on the Bulimia Test-Revised (BULIT-R) Total, the Dietary Restraint Scale-Revised (Restraint Scale), the Negative Mood subscale, and the scores on the Parent, Purging, Bingeing, and Anorexia subscales of the Anorexia Bulimia Inventory (ABI). Coefficients were then computed with daughters' scores for the same indices. The results of the analyses for the mothers' data are summarized in Table 6.

Table 6

Pearson Product-Moment Correlation Coefficients among Mothers' Self-Report Indices

<table>
<thead>
<tr>
<th>Indices</th>
<th>BULIT-R</th>
<th>Restraint</th>
<th>Neg. Mood</th>
<th>Parent</th>
<th>Purge</th>
<th>Bingeing</th>
<th>Anorexia</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>.76***</td>
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<td></td>
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<tr>
<td>ABI</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Negative Mood</td>
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<td>.55**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>.45</td>
<td>.50**</td>
<td>.59**</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Purge</td>
<td>.06</td>
<td>.21</td>
<td>.47</td>
<td>.49</td>
<td></td>
<td></td>
<td></td>
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<td>.70***</td>
<td>.78***</td>
<td>.54**</td>
<td>.61***</td>
<td>.73***</td>
</tr>
<tr>
<td>Anorexia</td>
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<td>.43</td>
<td>.62**</td>
<td>.75</td>
<td>.61**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. BULIT-R = Bulimia Test Revised—Total Score; Restraint = Dietary Restraint Scale Revised; Neg. Mood = Negative Mood; ABI = Anorexia Bulimia Inventory.

Sample Size: N = 26

** p ≤ .01
*** p ≤ .001
Several noteworthy relationships are presented in Table 6. There was a high, positive relationship between mothers' Total Restraint and Total BULIT-R scores ($r = .76, p < .001$) with 58% of the variance associated with scores on the two measures explained.

Furthermore, mothers' scores on the ABI Negative Mood subscale were found to be correlated significantly with their scores on the Total BULIT-R ($r = .54, p < .01$) and the Total Restraint ($r = .55, p < .01$). The percentage of variance between the scores on the Negative Mood subscale and the BULIT-R that is accounted for by the relationship between the two variables is 29%, while 30% of the variance between the Negative Mood subscale and the Restraint scale is explained. Mothers' Negative Mood scores were also statistically significantly related to their scores on the ABI Parent ($r = .59, p < .01$), the Bingeing ($r = .70, p < .001$), and the Anorexia ($r = .62, p < .01$) subscales. Again, 35%, 49%, and 38% (respectively) of the variance is accounted for by the relationships between the respective variables. These results suggest a moderate, positive relationship between mothers' mood disturbance, food and eating conflict, and symptoms among mothers.

Also of importance is the positive relationship between the mothers' Parent subscale scores and their scores on the Restraint Scale ($r = .50, p < .01$) and Bingeing subscale ($r = .78, p < .001$). The relationship between these respective variables accounts for 25% and 61% of the variance in scores. Finally, as indicated in Table 1, there were several positive relationships between mothers' scores on the Bingeing subscales with their scores on Total BULIT-R ($r = .72, r^2 = .52$), Restraint Scale ($r = .79, r^2 = 62$), Negative Mood ($r = .70, r^2 = 49$), Parent ($r = .78, r^2 = 61$), and the Purge subscale ($r = .54, r^2 = 29$).
Relationship among daughters' self-report indices. Table 7 presents the results of the Pearson product-moment correlation coefficients calculated between daughters' scores on the self-report indices. Daughters' scores on the Total BULIT-R were positively related to their scores on the Dietary Restraint Scale-Revised (Restraint Scale \( r = .78, r^2 = .61 \)) and the Purge \( (r = .61, r^2 = .37) \) and the Bingeing subscales \( (r = .81, r^2 = .66) \) of the ABI. Statistically significant positive relationships were also found between Daughters' Bingeing subscale scores and their scores on the Restraint Scale \( (r = .67, p < .001) \), and the Purge subscale \( (r = .68, p < .001) \). Forty-five percent and 46% (respectively) of the variance between the scores are accounted for by the relationships.

Relationship Between Grams Eaten and Self-Report Data

The mean number of grams of ice cream eaten by mothers was 102 (SD = 87.39; the minimum consumed was 10 g and the maximum 415 g). The mean number of

Table 7

Pearson Product-Moment Correlation Coefficients among Daughters' Self-Report

Indices

<table>
<thead>
<tr>
<th></th>
<th>BULIT-R</th>
<th>Restraint</th>
<th>Neg. Mood</th>
<th>Parent</th>
<th>Purge</th>
<th>Bingeing</th>
<th>Anorexia</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Restraint</td>
<td>.78***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABI</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Negative Mood</td>
<td>.60**</td>
<td>.46</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Parent</td>
<td>.32</td>
<td>.18</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purge</td>
<td>.61***</td>
<td>.48</td>
<td>.48</td>
<td>.05</td>
<td></td>
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</tr>
<tr>
<td>Bingeing</td>
<td>.81***</td>
<td>.67***</td>
<td>.46</td>
<td>.14</td>
<td>.68***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anorexia</td>
<td>.36</td>
<td>.44</td>
<td>.24</td>
<td>.45</td>
<td>.17</td>
<td>.39</td>
<td></td>
</tr>
</tbody>
</table>

Note. BULIT-R = Bulimia Test Revised--Total Score; Restraint = Dietary Restraint Scale Revised; Neg. Mood = Negative Mood; ABI = Anorexia Bulimia Inventory.

Sample Size: \( N = 26 \)

** \( p < .01 \)

*** \( p < .001 \)
grams of ice cream eaten by daughters was 122 (SD = 82; the minimum consumed was 18 g and the maximum 406 g).

It should be noted that data from three mothers' and two daughters' taste-tests were excluded from these analyses for various reasons. The laboratory eating data for one mother-and-daughter dyad could not be located, suggesting that the video recorder was not turned on during the taste-test. Data from a second mother were excluded because the videotape ran out prior to the completion of the taste-test. Taste-test data for one daughter were excluded from the analyses because of behavior strongly suggesting that she noticed the video camera (i.e., she was making faces at the camera and waving to it).

Hypotheses two and three were that a positive and meaningful relationship would exist between grams of ice cream consumed by mothers and daughters and various self-report measures (i.e., scores on the BULIT-R and Restraint Scale). The second half of hypothesis six was that a positive and meaningful relationship would be found between grams of ice cream consumed and mothers' and daughters' scores on their ABI Bingeing subscale scores. Pearson product-moment correlation coefficients were calculated to investigate the relationship between grams of ice cream consumed and the scores from the self-report questionnaires and also for the Body Mass Index (metric weight divided by metric height squared). The results of these analyses are shown in Table 8.

Although none of the reported coefficients were statistically significantly different from zero, several directional correlations or trends are noteworthy. For example, the relationship between mothers' grams eaten and daughters' body weight yielded a Pearson correlation of $r = .33$. This coefficient accounts for 11% of the variability between the two variables.
Table 8

Pearson Product-Moment Correlation Coefficients Between Grams Eaten and Scores on the Mother and Daughter Indices

<table>
<thead>
<tr>
<th>Indices</th>
<th>Mother Grams Eaten</th>
<th>Daughter Grams Eaten</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.05</td>
<td>-.05</td>
</tr>
<tr>
<td>Daughter</td>
<td>.10</td>
<td>-.03</td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.08</td>
<td>.18</td>
</tr>
<tr>
<td>Daughter</td>
<td>.06</td>
<td>-.14</td>
</tr>
<tr>
<td>Parent*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.09</td>
<td>.18</td>
</tr>
<tr>
<td>Daughter</td>
<td>.02</td>
<td>.50</td>
</tr>
<tr>
<td>Bingeing*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.19</td>
<td>-.04</td>
</tr>
<tr>
<td>Daughter</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Purge*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.16</td>
<td>-.01</td>
</tr>
<tr>
<td>Daughter</td>
<td>.03</td>
<td>-.06</td>
</tr>
<tr>
<td>Mood*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.23</td>
<td>.07</td>
</tr>
<tr>
<td>Daughter</td>
<td>.23</td>
<td>-.06</td>
</tr>
<tr>
<td>Anorexia*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.13</td>
<td>-.02</td>
</tr>
<tr>
<td>Daughter</td>
<td>.02</td>
<td>-.17</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.05</td>
<td>.19</td>
</tr>
<tr>
<td>Daughter</td>
<td>.22</td>
<td>.03</td>
</tr>
</tbody>
</table>

Note. BULIT-R = Bulimia Test-Revised, Restraint = Dietary Restraint Scale-Revised, Mood = Negative Mood; BMI = Body Mass Index.

Sample Size: Mothers' N = 30, Daughters' N = 33

* Anorexia Bulimia Inventory Subscale
In addition, there was a moderately positive relationship between daughters' grams eaten and their scores on the ABI Parent Conflict subscale \( (r = .50, r^2 = .25) \). Based on these results, it appears that daughters who consume more ice cream are more likely to report low self-efficacy in terms of their communication and influences on parents than daughters who consume less ice cream.

Another relationship of importance is between daughters' grams eaten and daughters' BULIT-R Vomiting/Laxative scores \( (r = .31) \). Ten percent of the variance in these variables is explained by the relationship of the scores. However, this relationship is not statistically significant.

**Relationship between mothers' and daughters' grams eaten.** Hypothesis four purported that a meaningful positive relationship would be found between mothers' and daughters' grams of ice cream consumed in the taste test. Pearson product-moment correlation coefficients were calculated to investigate the relationship between mothers' and daughters' grams of ice cream consumed. The results of this analysis yielded an \( r = -.06 \), explaining less than 1% of the variance between mothers' and daughters' grams of ice cream consumed.

**Hypothesis Five: Rate of Eating**

Mothers' and daughters' rate of eating was calculated, and several relationships involving rate of eating were assessed. The average rate of eating per minute was calculated by dividing subjects' total number of bites into time (15 minutes).

Mothers' mean rate of eating was 2.24 bites per minute \( (SD = 1.29) \), with a minimum rate of .20 bites per minute and a maximum rate of 4.93 bites per minute. Daughters' mean average rate of eating was 3.17 bites per minute \( (SD = 1.86) \), with a minimum rate of .27 bites per minute and a maximum rate of 7.20 bites per minute. There was a positive relationship (although not statistically significant) between mothers'
average rate of eating and daughters' average rate of eating \((r = .38, r^2 = .14)\).

Presented in Table 9 are the Pearson product-moment correlation coefficients that describe the relationships between mothers' and daughters' total rate of eating and scores for the other indices.

Mothers' mean taste-test time (i.e., elapsed time from the beginning of the taste-test until the subject placed the papers in one pile at the top or side of the table) was 9.4 minutes \((SD = .34)\), with a minimum amount of time at 3 minutes, 44 seconds and a maximum amount of time of 15 minutes. Daughters' mean taste-test time was 7.4 minutes \((SD = .27)\), with a minimum time of 2 minutes, 45 seconds, and a maximum of 15 minutes. Mothers' and daughters' mean bites-per-minute during the taste-test time were 1.92 \((SD = 1.12)\) and 1.46 \((SD = .93)\), respectively.

**Supplementary Analysis**

**Multiple correlations between daughters' grams eaten and other indices.** Multiple correlations were computed to better understand the combination of factors associated with the amount of ice cream eaten by the daughters. All combinations of BMI, BULIT-R scores, Restraint Scores, and ABI Parent, Bingeing, Purge, Mood, and Anorexia were used in stepwise regression equations as a means predicting grams eaten by mothers and daughters. An analysis of the relationship between daughters' grams eaten and daughters' BMI scores yielded a nonstatistically significant result of multiple \(R = .04\) \((p = .84)\). A similar analysis was completed using mothers' grams eaten as the criterion variable. Again, the results yielded a nonstatistically significant result between mothers' grams eaten and BMI \((R = .01, p < .94)\). Therefore, BMI was not controlled for in the remainder of the analyses.

**Predicting daughters' grams eaten.** Although not statistically significant, the combination of the daughters' BULIT-R score, BMI, Negative Mood score, and Restraint
### Table 9

Pearson Product-Moment Correlation Coefficients Between Average Rate of Eating and Scores on Other Mothers’ and Daughters’ Indices

<table>
<thead>
<tr>
<th>Indices</th>
<th>Mother's Average Rate of Eating</th>
<th>Daughter's Average Rate of Eating</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.15</td>
<td>-.04</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.03</td>
<td>.10</td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.02</td>
<td>-.17</td>
</tr>
<tr>
<td>Daughter</td>
<td>.08</td>
<td>.04</td>
</tr>
<tr>
<td>Parent(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.17</td>
<td>-.01</td>
</tr>
<tr>
<td>Daughter</td>
<td>.08</td>
<td>.42</td>
</tr>
<tr>
<td>Bingeing(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.05</td>
<td>-.13</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.24</td>
<td>.09</td>
</tr>
<tr>
<td>Purge(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>-.29</td>
<td>-.08</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.07</td>
<td>.13</td>
</tr>
<tr>
<td>Mood(^b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.00</td>
<td>.13</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.12</td>
<td>.51</td>
</tr>
<tr>
<td>Anorexia(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.09</td>
<td>.14</td>
</tr>
<tr>
<td>Daughter</td>
<td>-.23</td>
<td>-.11</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>.21</td>
<td>.13</td>
</tr>
<tr>
<td>Daughter</td>
<td>.18</td>
<td>-.16</td>
</tr>
<tr>
<td>Grams Eaten</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
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<td>.14</td>
</tr>
<tr>
<td>Daughter</td>
<td>.36</td>
<td>.87***</td>
</tr>
</tbody>
</table>

**Note.** BULIT-R = Bulimia Test-Revised, Restraint = Dietary Restraint Scale-Revised, BMI = Body Mass Index.

Sample Size: Mothers’ N = 22, Daughters’ N = 24

\(^a\) Anorexia bulimia Inventory Subscale

\(^b\) p ≤ .001
Scale score together explained the largest variance (17%) for DGE ($R = .41, p < .36$). It is important to note that the stability of this result is limited due to the small sample size ($n = 26$).

Mothers' scores on the total BULIT-R and the Negative Mood indices explained 11% of the variance in daughters' grams eaten ($R = .33, p < .38$). Mothers' grams eaten was not correlated with daughters' grams eaten ($R = .01, p < .96$).

**Predicting mothers' grams eaten.** There were two combinations of maternal factors that explained equivalent percentages of variance in MGE. First, inclusion of mothers' BULIT-R Total and Negative Mood scores in the regression analysis yielded a multiple $R$ of .31 ($p < .40$). Second, the inclusion of a combination of mothers' Negative Mood, BMI, Total BULIT-R, and Restraint Scale scores in the regression analysis yielded a multiple $R$ of .30 ($p < .65$). Both of the linear combinations of variables explained about 10% of variance in mothers' grams eaten.

**Validity of Restraint Scale with preadolescent daughters.** Some researchers have questioned the validity of the Dietary Restraint Scale-Revised (DRS) because it appears to be composed of two factors, a Diet Concern factor, and a Weight Fluctuation factor (Charnock, 1989; Johnson et al., 1983). This concern may be especially valid when assessing dietary restraint in young girls, who may have diet concerns, but are not yet experiencing regular fluctuations of weight (associated with cyclical dieting and overeating).

One means of investigating the validity of the Restraint Scale with preadolescent females is to reexamine the results using just the most dominant factor of the scale, the Diet Concern subscale. Such analyses produce results similar to those obtained when the total score of the Restraint Scale was used (i.e., Diet Concern and Weight Fluctuation factors combined). For example, the relationship between mothers' scores
on the total BULIT-R and their total Restraint Scale was very similar to the relationship
between mothers' total BULIT-R scores and the scores for the Diet Concern subscale ($r$
$= .76, p < .001; r = .73, p < .001; respectively). In a similar vein, the relationships
between daughters' scores on the total BULIT-R, and the total Restraint Scale and Diet
Concern subscales were $r = .78, p < .001; r = .72, p < .001$, respectively. Finally, a
similar pattern emerged again when comparing mothers' total BULIT-R scores to
daughters' total Restraint Scale and Diet Concern subscale scores ($r = .50, r = .44,$
respectively). The lack of noteworthy differences among relationships when either the
total Restraint Scale scores or the Diet Concern subscale scores were used suggests
that the issue of weight fluctuation is immaterial to the present results for daughters.

Summary

The major purpose of this study was to investigate the relationships between
mothers' and preadolescent daughters' dieting and eating patterns and to determine if
abnormal eating behaviors acknowledged in self-report inventories were demonstrated
in a laboratory eating situation. Supplementary analyses were also completed to
investigate factors associated with predicting grams of ice cream consumed by mothers
and daughters. Supplementary analyses were also completed to address the use of the
Restraint Scale with preadolescent girls. Results and limitations of the study are
summarized and discussed in the following chapter.
CHAPTER VI
CONCLUSIONS

Throughout the years, research-based evidence indicates that at a very young age, girls have internalized the socialized norm that thinness and beauty are equated with success (Feldman et al., 1988; Guyot et al., 1981; Stein & Reichert, 1990). Furthermore, researchers have reported that extreme eating disorders such as Anorexia Nervosa and Bulimia Nervosa run in families (Gershon et al., 1983). The major weakness of the research to date is that investigators have relied on self-report data only. Thus, the validity of the results in reference to actual eating and dieting behavior is questionable. The present study considered both self-report information and observational data in looking at the relationship between mothers' and preadolescent daughters' dieting and eating behaviors.

In this chapter the findings for each hypothesis of the present study are discussed. Furthermore, supplementary data investigating the ability to predict grams of ice cream eaten in the laboratory taste test is discussed in terms of the validity of using laboratory eating situations as a means of studying natural eating situations. Next, limitations of the present study are discussed as are implications for future studies.

Relationships among Mothers' and Daughters' Self-Report Indices

As hypothesized, a positive relationship was found between mothers' and daughters' scores on the Restraint Scale and the BULIT-R total. The relationship between mothers' and daughters' BULIT-R explained 17% of the variance in scores, while 36% of the variance was explained by the relationship between mothers' and daughters' Restraint Scale scores. The relationship between mothers' and daughters' Restraint Scale scores is consistent with an earlier finding reported by Hill et al. (1990).
In that study, Hill and his colleagues reported a statistically significant relationship between mothers' and daughters' scores on the Restraint Scale ($r_{[18]} = .68, p < .01$), which explained 46% of the variance in the relationship. In general, the present research supports the idea that high-restraint mothers have daughters' reporting similar levels of dietary restriction.

Also of interest was the relationship between scores on the ABI Parent and Negative Mood subscales, and scores on the BULIT-R and the Restraint Scale. For both mothers and daughters, there were high and typically statistically significant relationships between scores from these indices. These data suggest that when mothers and daughters endorsed more severe food restrictions and binge-eating behaviors, they were also likely to report greater conflict with their parents as well as more severe disturbances of mood. This finding is consistent with those from previous research showing that females with eating disorders tended to avow a greater incidence of both parental conflict and mood disturbances (Rosenfield, 1988; Streiger et al., 1992; Wonderlich & Swift, 1990). For example, Wonderlich and Swift (1990) reported that not only were mothers of eating-disordered daughters found to be more attacking and hostile than mothers of noneating-disordered daughters, but the daughters themselves were found to be more attacking of their mothers than were the noneating-disordered daughters. Although the internal consistency coefficient for the Parent subscale is slightly lower ($r = .64$) than the minimum criterion for research purposes, the present findings are consistent with those from previous research.

The results of the present study suggest that both mothers and daughters who reported more severe bulimia symptomatology (BULIT-R scores) and dietary restraint (Restraint Scale scores) were more likely to perceive that they have limited ability to influence their parents, or communicate constructively with them, compared to subjects
reporting lower levels of bulimia symptomatology and dietary restraint. That is, not only did the high-restraint (and/or high-bulimic symptomatology) daughters in the present study report such paternal relationships, but the mothers in the current study also reported similar perceptions in regard to their relationships with their mothers. Such data suggest the possibility of more extensive, intergenerational trends.

Other familial associations emerged with respect to a statistically significant relationship between mothers’ and daughters’ BULIT-R total scores and their scores on the ABI Negative Mood subscale. That is, both mothers and daughters avowed relationships between reported mood disturbances and eating disturbances (i.e., Bulimia Nervosa symptomatology). Factors accounting for this relationship were unclear. It may be that both mothers and their daughters respond to negative moods by eating. However, the mood disturbance could be a by-product of disturbed eating patterns and weight concerns. What can be said is that research supports the notion that there is an intergenerational link, in which both mood disturbances and dysfunctional eating were present.

Other noteworthy relationships involving the ABI subscales included the statistically significant, positive relationship between scores on the Bingeing subscale and scores on the Purge subscale. For both mothers and daughters, high scores on the Bingeing subscale tended to be associated with high scores on the Purge subscale. A regression analysis revealed high multiple-correlation coefficients between scores on the Bingeing and Purging subscales in samples of daughters and mothers ($R = .78, p < .000; R = .43, p < .01$, respectively). These findings are consistent with the speculation that high binge-prone mothers and daughters are both more likely to react to binge eating with extreme methods of ridding oneself of the food (i.e., self-induced vomiting and/or the use of laxative and/or dieting pills) than low binge-prone subjects.
Furthermore, there was a high, positive relationship between mothers' scores on the Bingeing and Purge subscales and daughters' scores on the same subscales. However, a regression analysis yielded a multiple $R = .06 (p < .74)$, suggesting that mothers' Bingeing subscale scores have negligible value for predicting daughters' Purging subscale scores.

Relationship Between Self-Report Indices and Rate of Eating

For both mothers and daughters, there was a statistically significant relationship between average rate of eating and grams of ice cream consumed. Again, a familial association was present, as similar relationships between these variables were found for both the mother and daughter samples.

Other positive relationships between daughters' self-reported data and average rate of eating (ARE) include those involving daughters' scores on the ABI Parent and Negative Mood subscales. The positive relationship between these indices can be viewed as supporting the hypothesis that daughters may be using food as a coping mechanism for dysphoric mood states or in parent/child contexts in which they feel ineffective in influencing outcomes. However, the lack of a statistically significant relationship between scores on the ARE (as well as daughters' grams eaten) and scores on the ABI Bingeing subscale undermines this hypothesis. If one is using food and bingeing behavior to cope with dysphoric emotions and perceptions of ineffective communication, one might expect the relationship between rate of eating and measures of bingeing behaviors to be stronger since bingeing is often characterized by a rapid consumption of food.
Contrary to expectations, no substantial relationships between either mothers' or daughters' scores on the self-report indices and grams of ice cream consumption were found. Thus, the results of the present study suggest that there is no correspondence between self-report data and laboratory eating behavior. However, the debate relating to the issue of how similar is laboratory eating to naturalistic eating situations limits drawing a firm conclusion on the results of this study.

The results of the multiple-regression analyses identified variables that slightly improved the prediction of grams eaten. First, the linear combination of daughters' BULIT-R, BMI, Negative Mood, and Restraint Scale scores accounted for the greatest amount of variance (17%) of daughters' grams eaten. This same combination of variables was one of the best predictors (although still weak) of the amount of ice cream consumed by mothers.

The results of the regression analyses are consistent with prior research findings suggesting that high-restraint individuals, when experiencing negative mood state (i.e., dysphoria or anxiety), may be more likely to counterregulate (paradoxically overeat) in a laboratory situation (Frost et al., 1982; Herman & Mack, 1975). On the other hand, the findings from the present study also substantiate the point that predicting eating in laboratory settings has been, and is, very difficult. Although prior research findings have supported the idea that high-restraint subjects consume more food under certain conditions (i.e., dysphoric mood, perceiving they have overeaten, etc.), the actual amount eaten by subjects varies tremendously. For example, in the present study the mean grams consumed by mothers was 102 (SD = 87.4). Frost et al. (1982) reported the mean number of M & M candies eaten by high-restraint, depressed subjects to be 57.22 (SD = 58.3).
Evidence Consistent with a Modeling Hypothesis of Abnormal Eating Patterns

Findings from the present study are consistent with the notion that abnormal eating behaviors may be learned from significant role-models. However, the data that would most strongly support the notion of modeling (i.e., similarities between mothers' and daughters' grams eaten) were not very compelling; the self-report data pertaining to eating and dietary symptomatology were consistent with a modeling explanation of why eating disturbances "run in families." For example, as previously noted, there were similar patterns between mothers' and daughters' perceptions of their ability to influence and communicate with their mothers. Mothers and daughters who felt less effective communicating with their parents were also more likely to report more severe eating disturbances (i.e., BULIT-R scores).

Also, both mothers' and daughters' reports of eating disturbance (i.e., BULIT-R scores) were correlated with negative mood disturbances (i.e., scores on the ABI Negative Mood subscale). Finally, for both mothers and daughters similar correlation coefficients were obtained describing the relationships between self-reported binging behavior and purging behavior, as measured by the ABI Bingeing and Purge subscales.

Summary of Methodological Issues

Because subjects volunteered to participate in each phase of the study, the results can only be generalized to a volunteer population of mothers and daughters. Borg and Gall (1989) outlined several characteristics that have been found to define those people who volunteer. Of relevance to this study is that females are less likely to volunteer than men for physically and emotionally stressful research. In the present study, it is possible that mothers who demonstrated more severe bulimic behaviors declined to participate due to embarrassment or an unwillingness to acknowledge their difficulties. In fact, only
four mothers in the current sample scored greater than Thelen's recommended cut-off score for high-bulimia symptomatology (i.e., BULIT-R > 85).

Another factor that needs to be considered is the effect of the "preload" milkshake on the subsequent amount of ice cream consumed by daughters. Previous research supports the notion that high-restraint, adult women consume significantly more ice cream when they perceive they have already exceeded their calorie allotment for the day (i.e., after consuming a milkshake preload) (Spencer & Fremouw, 1979; Polivy, 1976). However, to date, no study has been published using these procedures with preadolescent girls.

Also noteworthy is the ongoing debate about whether laboratory eating situations are adequate analogues of naturalistic eating situations. Meiselman (1992) summarized concerns about investigating eating behaviors in the laboratory. First, Meiselman questioned whether instructions regarding how one is to proceed with eating interferes with eating behaviors. Obviously, instructions (e.g., about how to taste-test ice cream) are not given in a natural eating situation. Second, Meiselman proposed that subjects eating in a laboratory situation are not able to decline food, or delay eating, as they may in a natural eating situation.

Kissileff (1992) countered Meiselman's concerns by noting that often in natural situations (e.g., a cafeteria at work), eating times were often scheduled; people most often eat not because they are hungry, but because they are "scheduled" to eat at that time. In regard to the issue of instructions being given to subjects, Kissileff (1992) concluded that subjects eat the same amount of ice cream whether the instructions were to merely taste, eat a normal meals' worth, or eat as much as one can.

Only one study was located in which authors addressed the eating behavior of high- and low-restraint preadolescents (Hill et al., 1989). In that study, the researchers
provided evidence that high-restraint preadolescent girls eat more biscuits after imagining eating highly palatable food, than low-restraint girls. Also, because a control (no-preload) group was not included in this study, one cannot speculate about the effects of a preload per se on the amount of ice cream consumed by daughters.

Other factors that may have had an effect on the results of the present study (but were not considered in the data collection phase) include the role of socioeconomic status (SES), menarche, and premenstrual syndrome (PMS). In regards to SES, Langer, Warheit, and Zimmerman (1991) reported that women of lower and middle SES reported greater problem rates regarding eating behaviors and attitudes. Again, because SES was not reported in the present study, no conclusion can be made regarding the impact of SES on the results of this study.

In regards to onset of menarche, Smolak, Levine, and Gralen (1993) reported that sixth-grade girls who had begun to menstruate did not show greater body dissatisfaction or higher incidence of dieting than the girls who had not started menstruating. However, girls who experienced both early onset of menstruation and developmental changes at the same time were more likely to be at risk for eating and body image disturbances. Fabian and Thompson (1989), however, reported that postmenarcheal girls (ages 10 to 15) had higher levels of eating disturbances than premenarcheal girls. Because daughters in the present study were not asked about their menstrual status, one cannot conclude what effect the absence or presence of menstruation and developmental body changes had on the results of the study.

Lastly, the issue of PMS and dietary intake was investigated by Giannini, Price, Loiselle, and Giannini (1985). In their study of dietary intakes in 20 women (between the ages of 20 and 30 year), it was reported that subjects with more severe PMS symptomatology recorded greater caloric intakes in their food diaries. As indicated
earlier, because issues of PMS were not inquired about in the present study, no conclusion can be drawn regarding the effects of PMS on the results of the present study.

Implications for Future Studies

Results of the present study suggest a need for further investigations into the familial patterns of not only abnormal eating behaviors, but also factors that interact with eating such as mood and parental relationships.

Longitudinal studies in which daughters who are considered at risk for developing eating-disorder symptomatology are needed to better understand the contributing factors of such disorders. In addition to a longitudinal component in such studies, comprehensive assessments of mood, parental relationship, weight, dieting behavior, and eating patterns should also be included. Furthermore, it would be beneficial to integrate interviews and/or naturalistic observations to validate the self-report data.

Further investigations into the validity and reliability of using laboratory settings and preload conditions on girls of various developmental ages and under different conditions (e.g., different emotional states, hunger states, etc.) are needed.

Finally, additional research is needed to further investigate the relationship between self-report data and naturalistic eating situations. In a similar vein, future research examining the effects of eating in different settings is needed.

Concluding Statements

This was an investigation of the relationships between mothers' and daughters' self-report data on abnormal eating behaviors. The second stage of the study investigated whether self-report behaviors are observed in a laboratory eating situation. The results of the self-report data supported the notion that mothers may be modeling
abnormal eating and dieting behaviors to their preadolescent daughters. Dysphoric mood and parental conflict were positively related to more severe bulimia symptomatology for both mothers and daughters. The combination of daughters' BMI and their scores on the BULIT-R and the ABI Negative Mood subscale was the best predictor of grams of ice cream consumed by daughters (17% of the variance explained by these relationships).

The combination of mothers' scores on the BULIT-R and the ABI Negative Mood subscale accounted for 11% of the variability in daughters' grams of ice cream consumed. The same combination of mothers' scores on the BULIT-R and the ABI Negative Mood subscale accounted for 10% of variance in mothers' gram of ice cream consumed.
REFERENCES


Appendix A

Bulimia Test--Revised (BULIT-R) (Mother/Daughter)
The BULIT-R (Mother)

Answer each question by filling in the appropriate circle on the computer answer sheet. Please respond to each item as honestly as possible; remember all of the information you provide will be kept strictly confidential.

1. I am satisfied with my eating patterns.
   1. agree
   2. neutral
   3. disagree a little
   4. disagree
   5. disagree strongly

2. Would you presently call yourself a "binge eater?"
   1. yes, absolutely
   2. yes
   3. yes, probably
   4. yes, possibly
   5. no, probably not

3. Do you feel you have control over the amount of food you consume?
   1. most or all of the time
   2. a lot of the time
   3. occasionally
   4. rarely
   5. never

4. I am satisfied with the shape and size of my body.
   1. frequently or always
   2. sometimes
   3. occasionally
   4. rarely
   5. seldom or never

5. When I feel that my eating behavior is out of control, I try to take rather extreme measures to get back on course (strict dieting, fasting, laxatives, diuretics, self-induced vomiting, or vigorous exercise).
   1. always
   2. almost always
   3. frequently
   4. sometimes
   5. never or my eating behavior is never out of control

6. I use laxatives or suppositories to help control my weight.
   1. once a day or more
   2. 3-6 times a week
   3. once or twice a week
   4. 2-3 times a month
   5. once a month or less (or never)
7. I am obsessed about the size and shape of my body.

   1. always
   2. almost always
   3. frequently
   4. sometimes
   5. seldom or never

8. There are times when I rapidly eat a very large amount of food.

   1. more than twice a week
   2. twice a week
   3. once a week
   4. 2-3 times a month
   5. once a month or less (or never)

9. How long have you been binge eating (eating uncontrollably to the point of stuffing yourself)?

   1. not applicable; I don't binge eat
   2. less than 3 months
   3. 3 months-1 year
   4. 1-3 years
   5. 3 or more years

10. Most people I know would be amazed if they knew how much food I can consume at one sitting.

   1. without a doubt
   2. very probably
   3. probably
   4. possibly
   5. no

11. I exercise in order to burn calories.

   1. more than 2 hours per day
   2. about 2 hours per day
   3. more than 1 but less than 2 hours per day
   4. one hour or less per day
   5. I exercise but not to burn calories or I don't exercise

12. Compared with women your age, how preoccupied are you about your weight and body shape?

   1. a great deal more than average
   2. much more than average
   3. more than average
   4. a little more than average
   5. average or less than average
13. I am afraid to eat anything for fear that I won’t be able to stop.

1. always
2. almost always
3. frequently
4. sometimes
5. seldom or never

14. I feel tormented by the idea that I am fat or might gain weight.

1. always
2. almost always
3. frequently
4. sometimes
5. seldom or never

15. How often do you intentionally vomit after eating?

1. 2 or more times a week
2. once a week
3. 2-3 times a month
4. once a month
5. less than once a month or never

16. I eat a lot of food when I’m not even hungry.

1. very frequently
2. frequently
3. occasionally
4. sometimes
5. seldom or never

17. My eating patterns are different from the eating patterns of most people.

1. always
2. almost always
3. frequently
4. sometimes
5. seldom or never

18. After I binge eat I turn to one of several strict methods to try to keep from gaining weight (vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics).

1. never or I don’t binge eat
2. rarely
3. occasionally
4. a lot of the time
5. most or all of the time
19. I have tried to lose weight by fasting or going on strict diets.
   
   1. not in the past year
   2. once in the past year
   3. 2-3 times in the past year
   4. 4-5 times in the past year
   5. more than 5 times in the past year

20. I exercise vigorously and for long periods of time in order to burn calories.
   
   1. average or less than average
   2. a little more than average
   3. more than average
   4. much more than average
   5. a great deal more than average

21. When engaged in an eating binge, I tend to eat foods that are high in carbohydrates (sweets and starches).
   
   1. always
   2. almost always
   3. frequently
   4. sometimes
   5. seldom, or I don’t binge

22. Compared to most people, my ability to control my eating behavior seems to be
   
   1. greater than others’ ability
   2. about the same
   3. less
   4. much less
   5. I have absolutely no control

23. I would presently label myself a ‘compulsive eater’ (one who engages in episodes of uncontrolled eating).
   
   1. absolutely
   2. yes
   3. yes, probably
   4. yes, possibly
   5. no, probably not

24. I hate the way my body looks after I eat too much.
   
   1. seldom or never
   2. sometimes
   3. frequently
   4. almost always
   5. always
25. When I am trying to keep from gaining weight, I feel that I have to resort to vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics.

1. never
2. rarely
3. occasionally
4. a lot of the time
5. most or all of the time

26. Do you believe that it is easier for you to vomit than it is for most people?

1. yes, it's no problem at all for me
2. yes, it's easier
3. yes, it's a little easier
4. about the same
5. no, it's less easy

27. I use diuretics (water pills) to help control my weight.

1. never
2. seldom
3. sometimes
4. frequently
5. very frequently

28. I feel that food controls my life.

1. always
2. almost always
3. frequently
4. sometimes
5. seldom or never

29. I try to control my weight by eating little or no food for a day or longer.

1. never
2. seldom
3. sometimes
4. frequently
5. very frequently

30. When consuming a large quantity of food, at what rate of speed do you usually eat?

1. more rapidly than most people have ever eaten in their lives
2. a lot more rapidly than most people
3. a little more rapidly than most people
4. about the same rate as most people
5. more slowly than most people (or not applicable)
31. I use laxatives or suppositories to help control my weight.
   1. never
   2. seldom
   3. sometimes
   4. frequently
   5. very frequently

32. Right after I binge eat I feel:
   1. so fat and bloated I can't stand it.
   2. extremely fat.
   3. fat.
   4. a little fat.
   5. OK about how my body looks or I never binge eat.

33. Compared to other people of my sex, my ability to always feel in control of how much I eat is:
   1. about the same or greater.
   2. a little less.
   3. less.
   4. much less.
   5. a great deal less.

34. In the last 3 months, on the average how often did you binge eat (eat uncontrollably to the point of stuffing yourself)?
   1. once a month or less (or never)
   2. 2-3 times a month.
   3. once a week.
   4. twice a week.
   5. more than twice a week.

35. Most people I know would be surprised at how fat I look after I eat a lot of food.
   1. yes, definitely
   2. yes
   3. yes, probably
   4. yes, possibly
   5. no, probably not or I never eat a lot of food

36. I use diuretics (water pills) to help control my weight.
   1. 3 times a week or more
   2. once or twice a week
   3. 2-3 times a month
   4. once a month
   5. never
The BULIT-R (Daughter)

Circle the answer that best describes you. Please answer each item as honestly as possible.

1. I am satisfied with my eating patterns.
   1. agree
   2. do not agree nor disagree
   3. disagree a little
   4. disagree
   5. disagree a lot

2. Would you say that you eat lots of food in short amount of time?
   1. yes, definitely
   2. yes
   3. yes, likely
   4. yes, maybe
   5. no, likely not

3. Do you feel that you have control over the amount of food you eat?
   1. most or all of the time
   2. a lot of the time
   3. sometimes
   4. hardly ever
   5. seldom or never

4. I am satisfied with the shape and size of my body.
   1. most of the time or always
   2. sometimes
   3. once in a while
   4. hardly ever
   5. seldom or never

5. When I feel that I have eaten too much, too often, I strictly diet, do not eat, use laxatives or water pills, make myself throw-up, or exercise for a long period of time.
   1. always
   2. almost always
   3. often
   4. sometimes
   5. never or I never eat too much, too often

6. I use laxatives or suppositories to help control my weight.
   1. once a day or more
   2. 3-6 times a week
   3. once or twice a week
   4. 2-3 times a month
   5. once a month or less or never
7. I am obsessed about the size and shape of my body.
   1. always
   2. almost always
   3. often
   4. sometimes
   5. seldom or never

8. There are times when I quickly eat a very large amount of food.
   1. more than twice a week
   2. twice a week
   3. once a week
   4. 2-3 times a month
   5. once a month or less or never

9. How long have you been eating to the point of stuffing yourself?
   1. I don't do this
   2. less than 3 months
   3. 3 months to 1 year
   4. 1 to 3 years
   5. 3 or more years

10. Most people I know would be amazed if they knew how much food I can eat at one setting.
    1. for sure they would be amazed
    2. very likely they would be amazed
    3. likely they would be amazed
    4. maybe they would be amazed
    5. no, they would not be amazed

11. I exercise to burn calories
    1. more than 2 hours per day
    2. about 2 hours per day
    3. more than 1 but less than 2 hours per day
    4. one hour or less per day
    5. I exercise but not to burn calories or I do not exercise

12. Do you think about your weight and body shape...
    1. a great deal more than other girls your age
    2. much more than other girls your age
    3. more than other girls your age
    4. a little more than girls your age
    5. the same as or less than girls your age
13. I am scared to eat anything because I am scared that I won’t be able to stop eating.

   1. always
   2. almost always
   3. often
   4. sometimes
   5. seldom or never

14. I get upset because I can’t quit thinking that I am fat or might gain weight.

   1. always
   2. almost always
   3. often
   4. sometimes
   5. seldom or never

15. How often do you make yourself vomit after eating?

   1. 2 or more times a week
   2. once a week
   3. 2-3 times a month
   4. once a month
   5. less than once a month or never

16. I eat a lot of food when I’m not even hungry.

   1. very often
   2. often
   3. once in a while
   4. sometimes
   5. seldom or never

17. My eating patterns are different from the eating patterns of most people.

   1. always
   2. almost always
   3. often
   4. sometimes
   5. seldom or never

18. After I eat a large amount of food I try to keep from gaining weight by getting lots of exercise, strict dieting, not eating, making myself throw-up, or taking water pills or laxatives.

   1. never or I don’t eat large amounts of food
   2. rarely
   3. sometimes
   4. a lot of the time
   5. most or all of the time
19. I have tried to lose weight by not eating or going on strict diets.
   1. not in the past year
   2. once in the past year
   3. 2-3 times in the past year
   4. 4-5 times in the past year
   5. more than 5 times in the past year

20. I exercise hard and for long amount of time so that I burn calories.
   1. average or less than average
   2. a little more than average
   3. more than average
   4. much more than average
   5. a great deal more than average

21. When eating a large amount of food, I usually eat foods that are high in carbohydrates like candy, doughnuts, bread, cookies, chips.
   1. always
   2. almost always
   3. often
   4. sometimes
   5. seldom or never

22. Compared to most people, I can control my eating behavior
   1. greater than others can
   2. about the same as others
   3. less than others
   4. much less than others
   5. I have no control over my eating behavior

23. I would say that I have times when I eat and feel out of control.
   1. absolutely
   2. yes
   3. yes, likely
   4. yes, maybe
   5. no, likely not

24. I hate the way my body looks after I eat too much.
   1. seldom or never
   2. sometimes
   3. often
   4. almost always
   5. always
25. When I am trying to lose weight, I feel that I have to use hard exercise, strict dieting, not eating, make myself throw-up, use water pills or laxatives.

1. never
2. hardly ever
3. sometimes
4. a lot of the time
5. most or all of the time

26. Do you believe it is easier for you to throw-up than it is for most people?

1. yes, it's no problem at all for me
2. yes, it's easier
3. yes, it's a little easier
4. about the same
5. no, it's less easy

27. I use water pills to help control my weight.

1. never
2. seldom
3. sometimes
4. often
5. very often

28. I feel that food controls my life.

1. always
2. almost always
3. often
4. sometimes
5. seldom or never

29. I try to control my weight by eating little or no food for a day or longer.

1. never
2. seldom
3. sometimes
4. often
5. very often

30. When eating a large amount of food, how fast do you usually eat?

1. faster than most people have eaten in their lives
2. a lot more faster than most people
3. a little more fast than most people
4. about the same rate as most people
5. more slowly than most people (or I do not eat large amounts of food)
31. I use laxatives or suppositories to help control my weight.
   1. never
   2. seldom
   3. sometimes
   4. often
   5. very often

32. Right after I eat a large amount of food I feel:
   1. so fat and bloated I can't stand it
   2. extremely fat
   3. fat
   4. a little fat
   5. OK about how my body looks or I never eat large amounts of food.

33. Compared to other girls, I am able to always feel in control of how much I eat:
   1. about the same or greater than them
   2. a little less than them
   3. less than them
   4. much less than them
   5. a great deal less than them

34. In the last 3 months, on the average how often did you eat uncontrollably to the point of stuffing yourself?
   1. once a month or less or never
   2. 2-3 times a month
   3. once a week
   4. twice a week
   5. more than twice a week

35. Most people I know would be surprised at how fat I look after I eat a lot of food.
   1. yes, for sure
   2. yes
   3. yes, likely
   4. yes, maybe
   5. no, likely not or I never eat a lot of food

36. I use water pills to help control my weight.
   1. 3 times a week or more
   2. once or twice a week
   3. 2-3 times a month
   4. once a month
   5. never
Appendix B

Dietary Restraint Scale--Revised
Dietary Restraint Scale--Revised (Mother)

1. How often are you dieting?
   a. Never  b. Rarely  c. Sometimes  d. Often  e. Always

2. What is the maximum amount of weight (in pounds) that you have ever lost within one month?
   a. 0 - 4 lbs.  b. 5 - 9  c. 10 - 14  d. 15 - 19  e. 20 lbs. or more

3. What is your maximum weight gain within a week?
   a. 0 - 1 lbs.  b. 1.1 - 2  c. 2.1 - 3  d. 3.1 - 5  e. 5.1+

4. In a typical week, how much does your weight fluctuate?
   a. 0 - 1 lbs.  b. 1.1 - 2  c. 2.1 - 3  d. 3.1 - 5  e. 5.1 lbs.+

5. Would a weight fluctuation of 5 pounds (lbs.) affect the way you live your life?
   a. Not at all  b. Slightly  c. Moderately  d. Very much

6. Do you eat sensibly in front of others and splurge alone?
   a. Never  b. Rarely  c. Sometimes  d. Often  e. Always

7. Do you give too much time and thought to food?
   a. Never  b. Rarely  c. Sometimes  d. Often  e. Always

8. Do you have feelings of guilt after overeating?
   a. Never  b. Rarely  c. Sometimes  d. Often  e. Always

9. How conscious are you of what you are eating?
   a. Not at all  b. Slightly  c. Moderately  d. Very much

10. How many pounds over your desired weight were you at your maximum weight?
    a. 0 - 1 lbs.  b. 1 - 5  c. 6 - 10  d. 11 - 20  e. 21+ lbs.
Dietary Restraint Scale--Revised (Daughter)

1. How often are you dieting?
   a. Never   b. Rarely   c. Sometimes   d. Often   e. Always

2. What is the most amount of weight that you have ever lost in one month?
   a. 0 - 4 lbs.   b. 5 - 9   c. 10 - 14   d. 15 - 19   e. 20 lbs. or more

3. What is the most weight you have gained within a week?
   a. 0 - 1 lbs.   b. 1.1 - 2   c. 2.1 - 3   d. 3.1 - 5   e. 5.1+

4. In a normal week, how much does your weight change?
   a. 0 - 1 lbs.   b. 1.1 - 2   c. 2.1 - 3   d. 3.1 - 5   e. 5.1 lbs.+

5. Would a weight loss or weight gain of 5 pounds affect the way you live your life?
   a. Not at all   b. Slightly   c. Moderately   d. Very much

6. Do you eat normally in front of others and eat a lot more when alone?
   a. Never   b. Rarely   c. Sometimes   d. Often   e. Always

7. Do you think too much about food?
   a. Never   b. Rarely   c. Sometimes   d. Often   e. Always

8. Do you have feelings of guilt after eating too much?
   a. Never   b. Rarely   c. Sometimes   d. Often   e. Always

9. How aware are you of what you are eating?
   a. Not at all   b. Slightly   c. Moderately   d. Very much

10. How many pounds over the weight that you want to weight were you when you weighed the most?
    a. 0 - 1 lbs.   b. 1 - 5   c. 6 - 10   d. 11 - 20   e. 21+ lbs.
Appendix C

Consent Form and Physical Status Rating Form
Consent Form

This study examines personal preferences about food appearance, aroma, color, and their relation to taste perception ratings and eating behaviors. We are interested in response patterns of cross-generations. All data collected will be number coded, so that you and your child cannot be identified, except by the principal investigator. Any identifying information about subjects will be kept secure until the data analysis is completed and then disposed of. You can be assured that the investigators are interested in the response patterns of large groups of children and adults, and not the responses of any individual subject.

Completing these inventories will take about 20 minutes. Completing these inventories will make your child eligible for a study being conducted at Utah State University by Kim Bushman. You may choose to not complete this packet or later decide you don't want to participate in this or any other studies. You may withdraw consent at any time.

This packet is expensive to reproduce, since it involves high-quality typesetting. You should not take one home to complete if you don't intend to return it. Please return it, even if you decide not to complete it--we can give the questionnaire to someone else.

You are not to put your name on response forms in this packet.

I have read the above and agree to participate.

Name of Mother: (please print) __________________

Name of Daughter: (please print) ________________

Signature of Mother: _______________________

Signature of Daughter: _______________________

Please check the appropriate answer:

My daughter: is currently taking medication Yes ___ No ___  
has diabetes Yes ____ No ____  
has allergies to chocolate, strawberry, or vanilla flavors Yes ____ No ____

My phone number is: __________________________ Date:________________
Physical Status Rating

Rate questions #1 and #2 below on a scale ranging from 1 to 6:

1. very satisfied; no desire to eat at all.
2. somewhat satisfied; but no desire to eat.
3. moderately satisfied; balanced between satisfied and the desire to eat.
4. somewhat unsatisfied; mild desire to eat.
5. moderately unsatisfied; moderate desire to eat.
6. very unsatisfied; strong desire to eat.

1. What is your level of hunger **right now**? __________
2. Think **carefully** about the time in the last 24 hours when you were the most hungry. Give a rating of your hunger at that time. __________
3. Record the time of your last meal. __________
4. Have you eaten anything since your last meal, except soft drinks? If so, list, with approximate amounts.

5. What is the average number of hours you sleep each night? ________
6. What is the number of hours of sleep you **need** each night to feel rested? ________

7. How many hours of sleep total did you get last night? _____
8. Are you allergic to any of the following foods, or will not consume them for health reasons? Please circle all that apply.
   a. chocolate, vanilla, strawberry flavors
   b. ice cream or dairy products
   c. sugar

9. Are you diabetic? yes no
10. Are you pregnant? yes no
11. Are you taking any medication that affects your mood or appetite? yes no

If so please list medications
Appendix D

Flavor Ratings and Preference Forms
## Flavor Rating Form

### Vanilla

1. **Sweetness**

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2. **Sourness**

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3. **Saltiness**

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4. **Bitterness**

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5. **Creaminess**

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<td>Extremely all creamy</td>
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6. **Goodness**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at</td>
<td>Extremely all good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Flavor Rating Form

Chocolate

1. Sweetness

1  2  3  4  5  6  7
Not at Extremely all sweet

2. Sourness

1  2  3  4  5  6  7
Not at Extremely all sour

3. Saltiness

1  2  3  4  5  6  7
Not at Extremely all salty

4. Bitterness

1  2  3  4  5  6  7
Not at Extremely all bitter

5. Creaminess

1  2  3  4  5  6  7
Not at Extremely all creamy

6. Goodness

1  2  3  4  5  6  7
Not at Extremely all good
### Flavor Rating Form

**Strawberry**

1. **Sweetness**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all sweet** |

2. **Sourness**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all sour** |

3. **Saltiness**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all salty** |

4. **Bitterness**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all bitter** |

5. **Creaminess**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all creamy** |

6. **Goodness**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not at |   |   |   |   | **Extremely all good** |
Preference Rating Form

Rate each flavor (Chocolate, Strawberry, and Vanilla) in order of preference (where "1" = most preferred and "3" = least preferred).

Example:

Sweetness Level Preference

<table>
<thead>
<tr>
<th>Flavor #1</th>
<th>Flavor #2</th>
<th>Flavor #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

In this case, the subject liked ice cream flavor #3 the most, and flavor #1 the least.

1. Sweetness Level Preference
   Chocolate ______
   Strawberry ______
   Vanilla ______

2. Creaminess Preference
   Chocolate ______
   Strawberry ______
   Vanilla ______

3. Flavor Preference
   Chocolate ______
   Strawberry ______
   Vanilla ______

4. Overall Preference
   Chocolate ______
   Strawberry ______
   Vanilla ______

Additional Comments, if any:
Appendix E

Debriefing Letter
To: Ice Cream Taste-Test Participants  
From: Dr. Dave Stein and Kim Bushman  
RE: Debriefing

Enclosed you will find your check of $15.00 for your participation in the ice cream taste-test at Utah State University. We would like to thank-you for your participation and hope you found it to be an enjoyable experience.

As the consent form stated parts of the study were not explained to you at the time of your actual participation but would be explained at the end of the study. We have scheduled a debriefing meeting to explain the real purpose of the study and to disclose all aspects of the study. The debriefing session is scheduled for Wednesday, January 20, 1993, at 5:30. We will meet in the Psychology Community Clinic Lobby located on the fourth floor of the Education Building. If you are not able to attend this meeting, a letter will be sent shortly after the meeting that will explain the study in detail. In the mean time, if there are any questions regarding your participation please contact Dr. Dave Stein at 750-3274 or Kim Bushman at 750-1986.

Again, we thank-you for your interest and participation in this study.

Sincerely,

[Signature]

David Stein, Ph.D.

[Signature]

Kim Bushman
Appendix F

Anorexia Bulimia Inventory (ABI)
ANOREXIA BULIMIA INVENTORY

Rate each of the statements below on a scale from 1 to 4 as they describe how you feel, act, or believe at present. The rating should identify whether or not the statement generally describes you at the present time. Mark all of your answers on the ANSWER SHEET that has been provided. DO NOT mark on this questionnaire.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel or act this way.

01. My parents and I have mastered the art of honest communication in all areas.
02. My moods get so low that it is painful.
03. I think that a successful, respected woman would not be fat.
04. (Leave this item BLANK if your periods have not started yet.) In the last year, I've missed more than 2 menstrual periods in a row.
05. I feel full of energy.
06. I often found myself in the middle of my parent's arguments.
07. I try to get things done, but I feel too slow or sluggish.
08. When I throw-up, I feel less nervous about gaining weight afterwards.
09. Lately, I feel unusually tired.
10. I feel very nervous when something gets in the way of my exercise schedule.
11. I have sudden changes in my mood.
12. If I eat a sweet roll, my body will likely turn it into fat.
13. I have periods of sadness that last for days.
14. I think that any person aware of fitness will always exercise with great energy.
15. I feel hollow and empty inside.
16. Certain thoughts really bother me because they repeat in my mind over and over again.
17. I feel worn out.
18. Within the last month or so, I've thought about suicide.
19. If I start eating, I won't be able to easily stop.
20. Anyone can be overweight, but it takes someone special to be thin.
21. Even when I do something well, I still don’t feel very worthwhile.
22. I go back and forth between trying to diet, and suddenly eating more snacks than most people eat in several days.

CHECK YOUR ANSWER SHEET. YOU SHOULD HAVE JUST MARKED ITEM # 22.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel or act this way.

23. My muscles seem to lack energy.
24. The food I eat is rapidly turned into fat.
25. Being overweight is a sign of a serious weakness in one’s personality.
26. I probably please my parents far more than I disappoint them.
27. I wake up a lot during the night, and toss and turn when I sleep.
28. My worries keep me from getting other things done.
29. I feel like giving up.
30. Lately, it takes extra effort to get myself started doing things.
31. Weekends and holidays should be like any other day to a person who is serious about regular exercise and fitness.
32. For no real reason, my heart will pound or race, and I will feel on edge.
33. People who are overweight risk rejection by loved ones.
34. I wish I felt more lively and energetic.
35. Others tend to be too worried about my health.
36. When I need to concentrate, my mind seems to wander.
37. Thin people are much happier than overweight people.
38. I would like to weigh myself several times a day.
39. My parents told me that things were O.K., even when I really sensed they were not.
40. (Leave this item BLANK if you have not started your periods yet.) My menstrual periods are very regular.
41. It is/was nearly impossible to change my parents’ mind about something.
42. If I eat too much, I just can't hold it down.

43. Butterflies or jitters in the stomach are with me much of the day.

44. I have eating sprees where I suddenly eat as much food as most people eat during a period of two days.

45. Even though I've carefully checked my work, I continue to feel the urge to recheck it again.

46. Others would prefer if I ate more.

47. Medicine that gives me diarrhea is a regular part of my diet.

48. Most of the time, it is/was useless to try to get my way at home.

CHECK YOUR ANSWER SHEET. YOU SHOULD HAVE JUST MARKED ITEM # 48.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel or act this way.

49. At least twice a week, I start an eating spree and can't stop until my stomach hurts terribly.

50. The activities that usually bring me joy don't make me happy these days.

51. If I gain two more pounds, I won't be able to comfortably wear a swim suit.

52. By the middle of the day, I am so fatigued that I have a hard time finishing my work.

53. Others say my weight is too low, but certain areas of my body still feel very fat.

54. If I fail in my diet, I must be a weak person.

55. It takes a lot of time to unwind or relax.

56. I take diet pills to help me lose weight.

57. When I wear loose-fitting clothes, others are less likely to lecture me to stop dieting.

58. I have frequent diarrhea.

59. While most women are concerned about their body shape, I am unusually worried about mine.

60. I think about all the calories I will burn up when I exercise.

61. I wish my nerves would calm down.

62. I feel restless if I am unable to be active after eating a meal.
63. I would say that being able to really get close to someone you like has a lot to do with being as thin and attractive as possible.

64. Throwing-up is a convenient way for me to avoid too many calories.

65. I feel especially guilty about my weaknesses and failures these days.

66. My friends say I am too thin; however, I really feel quite fat.

67. In public, I eat sensibly; but when alone, I will quickly eat enough food to satisfy 3-4 hungry people.

68. Other people seem less sad than me.

69. The more I struggle to keep my weight down, the more I seem to have eating sprees.

70. I have to fight to convince people that I don't need as much food as others to be healthy.

71. I feel nervous inside every day.

72. I have attacks of anxiety where I feel something terrible may happen.

73. Conflicts arise at home that never get talked about.

74. I wonder if the things I worry about would seem silly to other people.

75. I rarely take the time to exercise to lose weight.
Appendix G

ABI Subscales
Anorexia-Bulimia Inventory Subscale

Instructions to Subjects

Rate each of the statements below on a scale from 1 to 4 as they describe how you feel, act, or believe at present. The rating should identify whether or not the statement generally describes you at the present time. Mark all of your answers on the computer ANSWER SHEET that has been provided. Do not mark on this questionnaire.

Note to Examiner on ABI Scoring

All ABI item response options range from 0-3 and must be scored this way. On the ABI questionnaire itself, we have subjects respond to options on a 1-4 scale, because we have them mark their answers onto a published optical scanning sheet for computer scoring (and these require response options ranging from 1-4). Thus, before scoring the inventory, we recode all answers by decreasing the value of each response by 1.

Parent Conflicts

01. My parents and I have mastered the art of honest communication in all areas.
06. I often found myself in the middle of my parent's arguments.
26. I probably please my parents far more than I disappoint them.
39. My parents told me that things were O.K., even when I really sensed they were not.
41. It is/was nearly impossible to change my parents' mind about something.
48. Most of the time, it is/was useless to try to get my way at home.
73. Conflicts arise at home that never get talked about.

Depressed Mood

02. My moods get so low that it is painful.
11. I have sudden changes in my mood.
13. I have periods of sadness that last for days.
15. I feel hollow and empty inside.
18. Within the last month or so, I've thought about suicide.
21. Even when I do something well, I still don't feel very worthwhile.
27. I wake up a lot during the night and toss and turn when I sleep.
29. I feel like giving up.
30. Lately, it takes extra effort to get myself started doing things.
50. The activities that usually bring me joy don't make me happy these days.
65. I feel especially guilty about my weaknesses and failures these days.
68. Other people seem less sad than me.

Binge

19. If I start eating, I won't be able to easily stop.
22. I go back and forth between trying to diet and suddenly eating more snacks than most people eat in several days.
44. I have eating sprees where I suddenly eat as much food as most people eat during a period of two days.
49. At least twice a week, I start an eating spree and can't stop until my stomach hurts.
67. In public, I eat sensibly; but when alone, I will quickly eat enough food to satisfy 3-4 hungry people.
69. The more I struggle to keep my weight down, the more I seem to have eating sprees.
Anergia

05. I feel full of energy.
07. I try to get things done, but I feel too slow or sluggish.
09. Lately, I feel unusually tired.
17. I feel worn out.
23. My muscles seem to lack energy.
34. I wish I felt more lively and energetic.
52. By the middle of the day, I am so fatigued that I have a hard time finishing my work.

Anxiety

16. Certain thoughts really bother me because they repeat in my mind over and over again.
28. My worried keep me from getting other things done.
32. For no real reason, my heart will pound or race, and I will feel on edge.
36. When I need to concentrate, my mind seems to wander.
43. Butterflies or jitters in the stomach are with me much of the day.
45. Even though I've carefully checked my work, I continue to feel the urge to recheck it again.
55. It takes a lot of time to unwind or relax.
61. I wish my nerves would calm down.
71. I feel nervous inside every day.
72. I have attacks of anxiety where I feel something terrible may happen.
74. I wonder if the things I worry about would seem silly to other people.

Maladaptive Cognitions

03. I think that a successful, respected woman would not be fat.
12. If I eat a sweet roll, my body will likely turn it into fat.
20. Anyone can be overweight, but it takes someone special to be thin.
24. The food I eat is rapidly turn into fat.
25. Being overweight is a sign of a serious weakness in one's personality.
33. People who are overweight risk rejection by loved ones.
37. Thin people are much happier than overweight people.
51. If I gain two more pounds, I won't be able to comfortably wear a swim suit.
54. If I fail in my diet, I must be a weak person.
63. I would say that being able to really get close to someone you like has a lot to do with being as thin and attractive as possible.

Anorexia

4. (Leave this item BLANK if your periods have not started yet.) I've missed more than 2 menstrual periods in a row.
35. Others tend to be too worried about my health.
38. I would like to weigh myself several times a day.
40. (Leave this item BLANK if you have not started your periods yet.) My menstrual periods are very regular.
46. Others would prefer if I ate more.
53. Others say my weight is too low, but certain areas of my body still feel very fat.
57. When I wear loose-fitting clothes, others are less likely to lecture me to stop dieting.
59. While most women are concerned about their body shape, I am usually worried about mine.
62. I feel restless if I am unable to be active after eating a meal.
66. My friends say I am too thin; however, I really feel quite fat.
70. I have to fight to convince people that I don’t need as much food as others to be healthy.

**Purge**

08. When I throw-up, I feel less nervous about gaining weight afterwards.
42. If I eat too much, I just can’t hold it down.
47. Medicine that gives me diarrhea is a regular part of my diet.
56. I take diet pills to help me lose weight.
58. I have frequent diarrhea.
64. Throwing-up is a convenient way for me to avoid too many calories.

**Exercise**

10. I feel very nervous when something gets in the way of my exercise schedule.
14. I think that any person aware of fitness will always exercise with great energy.
31. Weekends and holidays should be like any other day to a person who is serious about regular exercise and fitness.
60. I think about all the calories I will burn up when I exercise.
75. I rarely take the time to exercise to lose weight.
Appendix H

Coding Form
Coding Instrument

ID: ___________ Date: _______________  Mother: _______
Coder: ___________________________  Daughter: _____

Definitions

Latency time: The time from the door closing to the first bite.
Taste-test ratings: Time from the first bite to the time the subject finishes the four rating scales (will usually be when the subject sets the paperwork towards the back of the table).
Free-eating: The time from when the subject finishes the ratings to the end of the 15 minutes.

V = Vanilla, C = Chocolate, S = Strawberry

Latency Time: _______________________

<table>
<thead>
<tr>
<th>Min.</th>
<th>Taste-Test Ratings Bites per Minute</th>
<th>Free-Eating Bites per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>5</td>
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<td></td>
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<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Behavior Observations:

Taste-testing rating: ___________________________________________

Free-eating (include latency time from beginning of free eating to time emptied bowls): ________
VITA

Kimberly K. Bushman

EDUCATION

Ph.D  Combined Clinical/Counseling/School Psychology, Utah State University, Logan: 1996.

M.S.  Counseling Psychology, Utah State University, Logan: 1993.

B.A.  Psychology, Mankato State University, Mankato, Mn: 1990.

A.A.  Psychology; Waldorf College, Forest City, la: 1988.

DISSERTATION: Cross-Generational Similarities Between Mothers' and Daughters' Abnormal Eating Behaviors.

THESIS: Bingeing Tendencies: Cross-Generational Similarities Between Mothers' and Daughters'.

PROFESSIONAL EXPERIENCE

9/94 - Present  Psychology Intern. Behavioral Health Unit, Logan Regional Hospital, Logan, Utah. Half-time (20 hr/wk) position. Responsible for providing individual, marital, and family therapy for inpatient adolescents and adults experiencing acute and long-term behavioral, health, and/or psychological difficulties. Participate in multidisciplinary staff meeting three times a week. Supervisor: Bruce Johns, Ph.D., Licensed Psychologist.

Estimated Total Client Contact Hours (Contract terminates in June, 1995): 250 - 300
Estimated Supervision and Case Conference Hours: 100
Total Hours: 350 - 400

10/94 - Present  Psychology Intern. Utah State University Counseling Center, Logan, Utah. Half-time (20 hr/wk) position. Responsibilities include providing individual, marital, and group therapy for college students presenting with a variety of behavioral and emotional problems. Co-lead group therapy. Completed intake interviews and reports, supervision of peer counselors, and case presentations at weekly staff meetings. Walk-in crisis coverage one-half day a week. Supervisor: Mary E. Doty, Ph.D., Licensed Psychologist.

Estimated Total Client Contact Hours (Contract terminates in June, 1995): 450
Estimated Supervision and Case Conference Hours: 100
Total Hours: 550-600
1993-1994

Psychology Intern. Bear River Mental Health, Logan, Utah. Half-time (20 hr/wk) position. Responsible for providing individual, marital, family, and group therapy for clients of all ages experiencing a variety of emotional and behavioral problems. Co-lead group therapy on self-esteem and domestic violence. Responsible for crisis intervention on walk-in or emergency basis one day a week. Completed comprehensive psychological assessments. Participate in weekly multidisciplinary staff meeting. Supervisor: Leland Winger, Jr., Ph.D., Licensed Psychologist.

Total Client Contact Hours: 500
Total Supervision and Staff Conference Hours: 100
Total Hours: 600

1993-1994


Total Client Contact Hours: 180
Total Supervision and Staff Conference Hours: 120
Total Hours: 300

1990-1994


Total Client Contact Hours: 250
Total Individual and Group Supervision Hours: 150
Total Hours: 400

1992-1993

Counseling Center Practicum. Utah State University Counseling Center, Logan, Utah. Responsible for providing therapeutic support for university students presenting with various emotional and behavioral problems. Completed intake interviews and reports. Co-lead group therapy focusing on interpersonal relationships. Conduct case presentations. Supervisors: Gwenna C. Couillard, Ph.D., Marriage and Family Therapist, Mary E. Doty, Ph.D, Licensed Psychologist.

Total Client Contact Hours: 180
Total Individual and Group Supervision: 120
Total Hours: 300

1992-1993

Psychological Specialist. Clinical Services Program of the Division of Services, Center for Persons with Disabilities, Logan, Utah. Part-time (20 hr/wk) position. Responsible for the coordination of multidisciplinary evaluation teams. Complete comprehensive psychological and psychoeducational evaluations including comprehensive intake interviews. Complete client follow-up, including
individual and/or family therapy and behavioral management training for children and adolescents experiencing various handicapping conditions and/or emotional disturbances. Complete comprehensive evaluation reports. Co-taught parent management classes. Participate in inservice training and case presentations. Provided supervision to practicum trainees. Supervisor: Phyllis Cole, Ph.D., Licensed Psychologist.

Total Client Contact Hours: 550
Total Individual and Case Conference Hours: 190
Total Hours: 740

1991-1992

School Psychology Practicum. Clinical Services Program of the Division of Services, Center for Persons with Disabilities, Logan, Utah. Participated on multidisciplinary team to conduct comprehensive evaluations for children, adolescents, and adults with disabilities. Responsible primarily for conducting intake interview, administering psychological and educational assessments, writing reports and recommendations based on results of the evaluation and case presentations at weekly staff meeting. Completed follow-up therapy children, adolescents, and family when needed. Co-taught parent management classes. Supervisor: Phyllis Cole, Ph.D., Licensed Psychologist.

Total Client Contact Hours: 180
Total Individual and Case Conference Hours: 120
Total Hours: 300

1990-1992


Total Assessment Hours: 200

TEACHING EXPERIENCE

Fall, 1994
Teacher Assistant. Psychology 421 Theories of Personality, Utah State University, Logan, Utah. Responsible for preparing and presenting occasional lectures, designing and grading tests, and grading papers.

Spring 1994
Teacher Assistant. Psychology 321 Abnormal Psychology, Utah State University Com-net Program, Logan, Utah. Responsible in preparing and presenting lectures, writing and grading exams and grading class assignments. Supervisor: Mary E. Doty, Ph.D., Licensed Psychologist.
Summer 1993  Instructor. Psychology 321 Abnormal Psychology, Utah State University Com-net Program, Logan, Utah. Responsible for preparing and presenting weekly lectures, designing and grading tests, and assigning final class grades.


CONSULTATION EXPERIENCE

Fall 1994  Early Intervention Research Institute, Utah State University, Logan, Utah. Supervised certification of several examiners in Columbus.

1991-Present  Early Intervention Research Institute, Utah State University, Logan, Utah. Administer a variety of psycho-educational assessments to children and parents for several research projects including follow-up studies investigating the effects of early intervention and evaluation the progress of children enrolled in Headstart. Supervisor: Mark Innocenti, Ph.D.

Spring 1993  Early Intervention Research Institute, Utah State University, Logan, Utah. Develop coding system for use in evaluating Community Integrated Service Systems (CISS) throughout the nation. Code grants that proposed CISS programs using the developed coding system. Supervisor: Richard Roberts, Ph.D.


PROFESSIONAL PRESENTATIONS AT REGIONAL AND NATIONAL CONVENTIONS


PROFESSIONAL TRAINING CONFERENCES ATTENDED


Twenty-Fifth Annual Brigham Young University Counseling Workshop: Feeling Good Together: Cognitive Interpersonal Therapy by David Burns, M.D., March 3-4, 1994, Provo, Utah.


Trauma, Memory, and Healing, Utah Society of Clinical Hypnosis. Keynote speaker: Bessel A. Van der Kolk, M.D. November 6, 1992, Salt Lake City, Utah.

PROFESSIONAL AFFILIATIONS

Student Member, American Psychological Association, 1989-present.
Student Member, Western Psychological Association, 1992-present.

ACADEMIC AWARDS AND HONORS

1993 Graduate Student Senator, Department of Psychology, Utah State University.
1992 Research Assistant of the Year, College of Education, Utah State University.
1990 Bachelor of Arts Degree with Summa Cum Laude honors, Mankato State University.
1988-1990 Mankato State University In-State Tuition Scholarship, Mankato State University.
1989 Who's Who Among Students in American Colleges and Universities.
1989 Executive Officer of Mankato State Psychology Club, Mankato State University.
1987 Sigvald Fauske Memorial Scholarship, Waldorf College.
1987 Waldorf Honor Scholarship, Waldorf College.