

Psychological Characteristics Related to Bulimia
in Early and Late Adolescent Females
by

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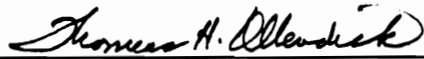
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(ABSTRACT)

The majority of research dealing with the eating disorder of bulimia has focused on characteristics of college-aged women, with those findings forming a basis for treatment planning with younger, adolescent women. While research in recent years has begun to examine those characteristics specifically related to bulimia in adolescence, there has been a relative lack of consideration of the effect of the developmental stage of the individual on these psychological characteristics. Such differential characteristics, if found to be present, would have implications for both the prevention and treatment of bulimia in younger populations.

The purpose of the present study was to investigate the concerns of high school and college females at high risk for bulimia at different developmental levels as well as to identify the psychological characteristics of high risk subjects across the age groups. Participants were asked to complete questionnaires assessing their self-perceptions on

a variety of intrapersonal and interpersonal dimensions.

Individuals aged 12-14 who were also at high risk for bulimia reported greater levels of depression and more feelings of inefficacy than did older, high risk individuals. Across all ages, women at high risk for bulimia were more dissatisfied with their body shape, were more depressed, experienced more difficulty with peer and family relationships, and felt more alienated from others than did individuals at low risk for bulimia. These results were discussed within a developmental framework, and it was suggested that individuals who cannot come to terms with the multiple changes of adolescence are at increased risk for engaging in bulimic behavior.

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TABLE OF CONTENTS

| | Page |
|--|------|
| ABSTRACT..... | ii |
| ACKNOWLEDGEMENTS..... | |
| INTRODUCTION..... | 1 |
| LITERATURE REVIEW..... | 1 |
| Prevalence..... | 1 |
| Developmental and Societal Issues..... | 6 |
| Body Image and Dissatisfaction..... | 14 |
| Psychological Characteristics..... | 21 |
| Family Characteristics and Peer Relationships... | 24 |
| Purpose of Present Study..... | 27 |
| METHOD..... | 28 |
| Subjects..... | 28 |
| Self-Report Measures..... | 28 |
| Procedure..... | 40 |
| Hypotheses..... | 41 |
| RESULTS..... | 44 |
| Reliability..... | 44 |
| Subject Characteristics..... | 44 |
| Preliminary Analyses..... | 48 |
| Primary Data Analyses..... | 50 |
| Regression Analyses..... | 69 |
| Discriminant Function Analyses..... | 72 |
| Correlational Analyses..... | 74 |
| Exploratory Data Analyses..... | 83 |
| DISCUSSION..... | 91 |
| REFERENCES..... | 112 |

APPENDICES

| | Page |
|---|------|
| A. Consent Form - Middle and High School Students.... | 122 |
| B. Consent Form - University Students..... | 125 |
| C. Demographic Information Sheet..... | 128 |
| D. Bulimia Test..... | 130 |
| E. Eating Disorders Inventory..... | 134 |
| F. Children's Personal Attributes Questionnaire..... | 137 |
| G. Offer Self-Image Questionnaire for Adolescents.... | 139 |
| H. Beck Depression Inventory..... | 144 |

LIST OF TABLES

| Table | Page |
|--|------|
| 1. Internal Consistency of All Measures..... | 45 |
| 2. Internal Consistency of All Scales Within Age Groups..... | 46 |
| 3. Subject Characteristics Across Ages and Within Age Groups..... | 47 |
| 4. Means and Results of ANOVAs for Age and Body Mass Index..... | 49 |
| 5. Means and Results of 3 X 3 ANOVA for BULIT Score..... | 52 |
| 6. Interaction Means and Results for 3 X 3 ANOVA on BULIT Score..... | 53 |
| 7. Means and Results of 3 X 3 ANOVA for the Beck Depression Inventory..... | 54 |
| 8. Interaction Results for 3 X 3 ANOVA for the Beck Depression Inventory..... | 55 |
| 9. Means and Results of 3 X 3 ANOVA for Level of Androgyny..... | 58 |
| 10. Interaction Results of 3 X 3 ANOVA for Level of Androgyny..... | 59 |
| 11. Means and Results of Univariate Analyses for Subscales of the Offer..... | 61 |
| 12. Interaction Results of ANOVAs for Offer Subscales..... | 62 |
| 13. Means and Results of Univariate Analyses for Subscales of the EDI..... | 65 |
| 14. Interaction Results of ANOVAs for Subscales of the EDI..... | 66 |
| 15. Correlation Matrix of All Variables Across All Subjects..... | 75 |

LIST OF TABLES (cont.)

| Table | Page |
|--|------|
| 16. Correlation Matrix of All Variables for Ages 12-14..... | 77 |
| 17. Correlation Matrix of All Variables for Ages 15-17..... | 79 |
| 18. Correlation Matrix of All Variables for Ages 18-20..... | 81 |
| 19. Subject Characteristics of Bulimic and Nonbulimic Subjects..... | 85 |
| 20. Means and Results of One-Way ANOVA for Beck Depression Inventory..... | 86 |
| 21. Means and Results of One-Way ANOVAs for Subscales of the Offer..... | 88 |
| 22. Means and Results of ANOVAs for Subscales of the EDI..... | 89 |

LIST OF FIGURES

| Figure | Page |
|--|------|
| 1. Age Group by BULIT Group Interaction for Beck Depression Inventory..... | 57 |
| 2. Age Group by BULIT Group Interaction for the Ineffectiveness Subscale of the EDI..... | 68 |

INTRODUCTION

Objective

The majority of research dealing with the eating disorder of bulimia has focused on characteristics of college-aged women, with those findings forming a basis for treatment planning with younger, adolescent women. In recent years, research has begun to examine those characteristics specifically related to bulimia in adolescence. While this is a much needed step in terms of our understanding of bulimia in general and in terms of its associated features in adolescence, there has been a relative lack of consideration of differential characteristics depending on the developmental stage of the individual. Such differential characteristics, if found to be present, would have implications for both prevention and treatment of bulimia in younger populations. The objective of the current study, therefore, was twofold. First, the psychological characteristics associated with bulimia in adolescents were examined and, second, the relationship of those characteristics in early, middle, and late adolescence were explored.

Background

Introduction

There has been a growing interest in the eating disorder of bulimia over the past ten years. During this time period,

there has been an increase in both the syndrome of bulimia and in bulimic-like symptoms such as bingeing and purging in 15- to 25-year old, middle- to upper-middle class, Caucasian women (Johnson & Maddi, 1986). Articles in both the scientific and popular journals have addressed issues such as the etiology of bulimia, its prevalence in clinical and nonclinical populations, and its potential treatments. The majority of the literature to date has dealt with bulimia in college-aged populations, even though the onset of bulimia is generally acknowledged to occur in adolescence.

Bulimia is an eating disorder that has been operationalized as recurrent episodes of binge eating, a feeling of lack of control over eating behavior during the binge, and persistent overconcern with body shape and weight (DSM-III-R, 1987). In addition, the DSM-III-R criteria require at a minimum an average of two binge-eating episodes a week for at least three months and the use of purgatives, diuretics, strict dieting/fasting, and/or vigorous exercise to control weight.

Bulimia prevalence studies have been hampered by problems in defining binge-eating and in choosing the proper inclusion criteria to define the bulimia syndrome (Pyle & Mitchell, 1986). The majority of researchers agree that binge-eating consists of eating excessive quantities of food over a short

period of time. However, there is disagreement over what constitutes "excessive" and "a short period of time," as well as disagreement about the inclusion of the subjective experience of binge-eating. Similarly, a fear of loss of control over eating as a criterion for binge-eating has not been used consistently across studies. DSM-III-R has improved on past criteria by specifying the number of binges to have occurred within a specific time frame and by discussing the qualitative aspects of the binge (e.g., types of foods consumed). However, as attempts to classify the bulimia syndrome are relatively recent, it is likely that the optimal set of diagnostic criteria have not been formulated yet. It appears, though, that the more strict the criteria, the lower the prevalence rate of the disorder. For these reasons, discussion of prevalence studies must take into account the diagnostic criteria used to define bulimia.

Estimates of the prevalence of bulimia in the general college population range from 13 to 20 percent (Halmi, Falk, & Schwartz, 1981; Pope, Hudson, Yurgelun-Todd, & Hudson, 1984; Pyle, Mitchell, Eckert, Halvorson, Nueman, & Goff, 1982; Russell, 1979). In contrast, Hart and Ollendick (1985) found the point prevalence of bulimia to be 5 percent in female university students and 1 percent in working women. They suggested that their use of strict DSM-III criteria as well

as distinguishing between bulimic symptoms and bulimia as a syndrome were the reasons for lower percentages than those typically reported in the literature.

The prevalence of bulimia in adolescent populations has begun to be assessed in recent years. Using rigorous DSM-III criteria, Johnson, Lewis, Love, Lewis, and Stuckey (1984) found that 4.9 percent of female high school students between the ages of 13 and 19 could be classified as bulimic. On the other hand, Carter and Duncan (1984) found that 9 percent of a high school female population engaged in self-induced vomiting for purposes of weight control. VanThorre and Vogel (1985) found that some students at all age levels (14-18 years old) could be classified as "probably bulimic" based on their responses to the Eating Disorder Inventory (EDI; Garner & Olmsted, 1983). Percentages ranged from 12.5 percent for 15-year-olds to 20.1 percent for 14-year-olds. Finally, Greenfeld, Quinlan, Harding, Glass, and Bliss (1987) indicated that 4% of young women and 0.8% of young men aged 13-19 years could be considered bulimic according to DSM-III criteria. Moreover, these students, particularly the young women, reported a high degree of concern with weight, dieting, and body image. More recently, Stein and Brinza (1989) reported that the prevalence rate of bulimia in female junior high and high school students was 2 percent and 4 percent,

respectively.

The prevalence of bulimic-like behaviors also has been addressed in the literature in recent years. Due to inconsistencies in defining "binge-eating," comparisons of frequencies for this behavior are difficult. However, it appears that binge-eating is a frequent behavior in both males and females (Pyle & Mitchell, 1986). Twenty-one percent of female high school students and 17 percent of female college students reported weekly binge-eating (Johnson, Lewis, Love, Stuckey, & Lewis, 1983), and between 56 and 79 percent of female students indicated that they had binged at some point in their lives (Johnson et al., 1983). Katzman, Wolchick, and Braver (1984) indicated that 7.2 percent of college females engaged in binge-eating at least eight times per month. The incidence of binge-eating for males has been estimated to be lower than that of females, with 45 percent of the college males surveyed admitting that they had engaged in binge-eating at some point and 11 percent admitting that they binged at least once per week (Pyle et al., 1982). Pyle and Mitchell (1986), in their review, also indicated that women are more likely than men to consider themselves binge-eaters, to fear losing control over eating, to fear becoming overweight, and to engage in self-deprecatory thoughts and feel depressed after completing an episode of binge-eating.

The frequency of self-induced vomiting has also been examined. Between 6 and 16 percent of the samples surveyed admitted to engaging in this behavior (Hawkins & Clement, 1980; Johnson et al., 1983; Pyle et al., 1982). Pyle et al. (1982) reported that 6 percent of college males engaged in self-induced vomiting.

While the literature on bulimia has addressed such questions as the prevalence of the disorder, the range and severity of binging and purging, and its medical complications (Ordman & Kirschenbaum, 1986), much remains unknown regarding the attitudes that bulimics have toward themselves, their eating, and their bodies. In addition, little is known about bulimia in adolescents, including the role that normal developmental stressors play in its occurrence.

Developmental and Societal Issues

Since there seems to be a strong parallel between the psychopathological features of anorexia nervosa (e.g., weight phobia, decreased autonomy, low self-esteem) and normative adolescent concerns regarding physical appearance, autonomy, and self, it has been suggested that an understanding of the disorder should include an integration of developmental and clinical theory (Strober & Yager, 1985). Correspondingly, it may be desirable to formulate a similar model for use in guiding the assessment and treatment of bulimia in

adolescents. The distorted body image, low self-esteem, and dependency seen in bulimia (e.g., Boskind-Lodahl, 1976; Boskind-White & White, 1987; Thompson, Berg, & Shatford, 1987) may also be related to those hallmarks of adolescence that prepare the individual for integration into the adult world.

In order to explore more fully the relationship between the psychopathology of bulimia and typical adolescent concerns, it is necessary to understand the physical, cognitive, and psychological changes that occur during adolescence. The most obvious changes which occur are the biological/physical changes, including a marked increase in height, development of secondary sex characteristics, the maturation of sexual organs, and the biological ability to reproduce (Tobin-Richards, Boxer, McNeill-Kavrell, & Petersen, 1984). Changes in cognitive capacity are occurring such that the adolescent becomes capable of abstract, reflective thought (Piaget and Inhelder, 1969). These cognitive changes are demonstrated behaviorally through the individual's ability to recognize and resolve dissonance and to consider the potential for personal growth (Strober & Yager, 1985). The adolescent also begins to experience increased psychological autonomy from parents and from peers. Conformity to peer pressure seems to peak during early adolescence and then gives way to

increasingly independent beliefs and behaviors (Coleman, 1977). Adolescents also begin to view parents in a more realistic light, disengage from parental values, and develop a sense of their own uniqueness (Petersen & Taylor, 1980).

A failure to satisfactorily resolve any of these crises may dispose the adolescent to the development of bulimic behavior. For example, an inability to accept one's changing body may lead to increasingly more drastic efforts to keep that body at a prepubertal level. Rejection by peers in early adolescence may lead to lowered self-esteem and lack of confidence in one's self (Strober & Yager, 1985). Parental imposition of strict controls and lack of understanding of the adolescent's ambivalent struggle for independence may arouse conflict and anxiety in regard to the need for autonomy (Schonfeld, 1971). One way that the insecure, conflicted adolescent may attempt to take control of her body and her life, as well as to cope with stress, is through bingeing and purging.

Adolescence has typically been viewed as a time of turbulence, with a greater amount of stress being correlated with the development of psychological difficulties in adulthood. Adolescents who are unable to develop effective means of coping with the many changes during this period generally have been viewed as more at risk for later problems

than adolescents who evidenced appropriate coping strategies. There is an alternate way of conceptualizing the role of stress during adolescence, however.

In a longitudinal study designed to examine adolescent predictors of adult psychological health, Peskin (1972) found that a shift from a relatively tension-free preadolescence to a reactive and stressful adolescence was the best predictor of adult psychological health, especially in females. This shift in behavior and attitudes in females took the form of increased whining, decreased self-confidence and independence, and a decreased ability to control the temper (Peskin, 1972).

Peskin (1972) and Strober and Yager (1985) suggest that increased turbulence in adolescence provides an opportunity to form a stable self-structure, become tolerant of emotional intensity and ambiguity, and become flexible at problem-solving. Adolescents who remain outwardly unresponsive in the face of the disruption of adolescence, who limit their emotional expression and strive for external approval and recognition, risk becoming overwhelmed by the challenges and burdens of adolescence (Strober & Yager, 1985). The empirical findings of Peskin (1972) provide support for clinical reports of decreased levels of overt stress in the adolescence of bulimic patients. Boskind-White (personal communication, 1987), for example, stated that a common characteristic of

her bulimic patients was an absence of psychological pain or stress in their adolescence. This absence of stress may have limited these patients' abilities to learn adaptive coping skills.

Of all the changes with which the adolescent is confronted, the most obvious changes are physiological. The adolescent experiences these changes both directly and through the reactions of those around him/her to his/her maturing body. The reactions of self and others in this area are influenced in large part by sociocultural factors. Johnson and Maddi (1986) discuss a cultural shift in attitudes toward the shape of women's bodies which has led to an emphasis on thinness for women. These authors suggest that an increasing focus on achievement for women and a corresponding confusion over the most appropriate means of expressing achievement needs has led to control over body shape and size becoming one way in which young women could compete among themselves and show self-control. Chernin (1981) has pointed out the psychological relationship between size and perceived power, and hypothesizes that our male-dominated culture requires that women be slender in order to symbolically limit their power.

Regardless of the reason, research has shown that the preferred body size for women has been steadily decreasing over the past several years. For example, Garner, Garfinkel,

Schwartz, and Thompson (1980) analyzed the body dimensions of centerfold models for Playboy magazine, as well as height, weight, and age measures for winners of the Miss America pageant, over the period of 1959-1978. Garner and his colleagues concluded that a more tubular body form is becoming desirable for women, with waist measurements becoming larger and bust and hip measurements becoming smaller over time. This trend is in direct contradiction to actuarial statistics which indicate that average women of similar ages to the sample are getting heavier (Garner et al., 1980). Young women therefore find themselves in a difficult situation, trying to resolve the cultural demands for excessive thinness with the realities of their physiology.

Bruch (1973) and Chernin (1981), among others, have attempted to link the recent cultural focus on idealizing lower body weights with the apparent increase in anorexia nervosa and bulimia since the 1960's. Garner and Garfinkel (1980), in one of the few empirical investigations of this hypothesis, found that young women in the modeling and professional dance professions exhibited a higher incidence of anorexia nervosa and excessive dieting concerns than a comparable group of female music students. This suggests that pressures from significant social groups may be related to harmful dieting practices and efforts to achieve unrealistic

body sizes.

The importance of physical characteristics in defining one's self-concept is acknowledged to be greater for females than males. At an earlier age than males, females exhibit a more clearly defined body concept and greater accuracy in estimating body size (Fisher, 1964). Murphy (1972) has suggested that females are more aware of their bodies because their body is more linked to their cultural role and to social definitions of their worth. The role and status of males, on the other hand, has been defined typically in terms of achievement, rather than in terms of physical characteristics. Females also exhibit a more intense dissatisfaction with weight-related body parts (e.g., hips, thighs) than do males of the same age (Fisher, 1964). Fisher emphasized the earlier maturation of females and the development of menstruation in explaining this discrepancy, in part because early attainment of puberty (i.e., menstruation) has been associated with being short and overweight, while late puberty has been associated with being thin and tall (Crisp, 1977). Given the societal demands for the tall, thin body type, the adolescent female who attains puberty early may receive negative reactions from peers, family, and/or society for an event that is out of her control.

Boskind-Lodahl (1976) has presented a formulation of the

etiology of bulimia as related to issues of ideal body image, femininity, and societal attitudes about female self-worth. Bulimarexia, a term coined by Boskind-Lodahl, is an obsessive pursuit of thinness due to an acceptance of the cultural attitude that physical appearance is the most important factor in determining a woman's worth to herself and others. Bulimarexia is seen as developing because of a disproportionate desire to please others, particularly men. As the bulimarexic lacks a sense of self-worth and personal power, she typically attempts to prove her worth by accommodating to the stereotype of thinness. Food restriction thus becomes perceived by these young women as representing the struggle for control over themselves and others.

Boskind-Lodahl (1976) states that when strict control over food intake fails to positively impact the bulimarexic's perception of herself, a binge episode occurs and intense pleasure is achieved through being out of control. However, shame and disgust typically follow the binge episode, and control is reasserted through vomiting and purging. The bulimarexic's preoccupation with being overweight in a society where obesity invites male rejection leads to fasting, resulting in a struggle that eventually leads to a further binge episode. The cycle then repeats itself.

Body Image and Body Dissatisfaction

Body image distortion is one of the hallmarks of an eating disorder and has been conceptualized in several ways. Garner and Garfinkel (1981) suggest that the distortion may reflect either an actual perceptual deficit or a cognitive/affective influence on the perception of one's body. In other words, an individual's distortion of body image may be related to an actual defect in cortical functioning or it may be based on the individual's distorted thoughts and feelings about their body size. Ratings of body size in the latter case would be based not on actual perception but on maladaptive cognitions and affective reactions. The majority of research to date has been concerned with the perceptual distortion of body image. The lack of systematic research into the affective component of a disturbance in body image may be related in part to the absence of a suitable method for measuring the phenomenon (Cooper, Taylor, Cooper, & Fairburn, 1987).

Although body image and distortion of that image have been studied in great detail in regards to anorectics, relatively little attention has been paid to the body image of bulimics. The research that does exist in this area deals mainly with samples that are college-aged or older. However, distortions in body size perceptions have been linked with reports of bulimic-like behaviors in anorectics (e.g.,

vomiting, binging, abuse of purgatives), suggesting that bulimics may also experience some degree of body image distortion (Freeman, Thomas, Solyom, & Miles, 1983). Freeman, Thomas, Solyom, and Koopman (1985) found that previously-anorexic bulimics and never-anorexic bulimics were more dissatisfied with their bodies than were anorexic-restrictors and normal controls, and previously-anorexic bulimics overestimated their body size more than did the other groups. Further, clinical samples of normal weight bulimics have been shown to express more dissatisfaction with their bodies than normal weight controls (Katzman & Wolchik, 1984; Ordman & Kirschenbaum, 1986; Thompson et al., 1987). Thompson, Berland, Linton, and Weinsier (1986) found that normal weight bulimics, with no history of anorexia nervosa, overestimated the size of more body sites when compared with controls, obese individuals, and subjects with anorexia nervosa.

The traditional assumption that body size overestimation is indicative of eating disordered populations alone has been challenged. Hsu (1982), for example, indicated that body image distortion was not limited to anorectics. In the majority of studies that he reviewed, normal as well as obese and pregnant women overestimated body size. In some cases, normals overestimated at least as much as the anorectics. Birtchnell, Dolan, and Lacey (1987) examined body width

perceptions of 50 non-eating disordered women and found that all body widths were overestimated, with the distortion being the greatest at the waist and the least at the hips. There was no difference in body image overestimation between this group and a matched group of bulimic women. The non-eating disordered women also showed dislike of various body parts, with hips being disliked most often. These results support the work of other researchers who suggest that body size overestimation is a common phenomenon in the young female population and cannot be considered pathognomonic of those with eating disorders (Button, Fransella, & Slade, 1977; Casper, Halmi, Goldberg, Eckert, & Davis, 1979). However, given that the majority of research has examined only the perceptual aspect of body image, the affective component of body image disturbance should not be ruled out at this time as a diagnostic indicator or an at-risk variable.

In recent years, increasing attention has been directed toward the body image concerns of younger populations. This is a logical step both intuitively and theoretically, as adolescence is a time of rapid, confusing, and sometimes unwelcome physiological changes. The manner in which the adolescent learns to cope with these changes could have profound implications for his/her future psychological health.

A number of surveys have shown that dissatisfaction with

body shape is common among adolescent girls. An early study by Huenemann, Shapiro, Hampton, & Mitchell (1966) found that three-quarters of the sample of teenaged girls strongly desired to lose weight, although only one-quarter of the sample was classified as overweight. More recently, Davies and Furnham (1986) indicated that, even though less than 4% of their sample of adolescent females aged 12-18 years was classified as overweight, nearly 50% of the sample wished to lose weight. Similarly, Greenfeld et al. (1987) reported that 46% of 337 females (13 to 19 years of age) believed themselves to be overweight, despite the fact that only 12% of those young women were classified as overweight. Greenfeld and his colleagues identified widespread concerns of weight, body image, dieting, and eating behaviors throughout their sample.

Body image dissatisfaction also may be related to more serious outcomes. For example, anorexic adolescents evaluate their bodies less favorably (i.e., perceive themselves as more overweight) than do normal weight adolescents (Leon, Lucas, Colligan, Ferdinande, & Kamp, 1985). Casper, Offer, and Ostrov (1981) found that anorexic adolescents aged 16-19 years showed more disturbances in self-perception and body image as compared to normal peers. Finally, Post and Crowther (1985) indicated that negative self-perceptions of weight and body image were greater in bulimic vs. nonbulimic girls. The

relationship between body image dissatisfaction and the development of an eating disorder cannot be discussed in causal terms given the current state of research. Further examination of this relationship is indicated, however, in order to better determine the role of body image distortion/dissatisfaction in the etiology of eating disorders.

There appear to be some developmental differences in body shape and dieting concerns among adolescents. As girls become older, they appear to become less satisfied with their weight, ranging from 30 percent of 12-year-olds perceiving themselves as overweight to 65 percent of 16- and 18-year-olds (Davies & Furnham, 1986). Davies and Furnham also found that dieting habits change as girls mature, with older girls being more likely to alter both the type and amount of food eaten in order to lose weight.

Freeman et al. (1985) found that all subjects (previously anorexic bulimics, never-anorexic bulimics, anorexic restrictors, and normal controls) overestimated their body size to some degree. It seems, however, that a younger age and generally distorted attitudes and behaviors with regard to food were more directly related to body size distortion in previously-anorexic bulimics. Freeman et al. suggest that this may be due to the fact that younger subjects have had

less time to become comfortable with or aware of their bodies.

Casper et al. (1981) discuss findings regarding anorexic patients that may be worthy of exploration with bulimics. In an investigation of the differences between younger (ages 12-15) and older (ages 16-19) anorexic females, Casper et al. found that younger patients generally experienced more conflicts related to maturational changes whereas older patients typically showed more concern over individuation-separation issues. As younger patients exhibited early onset and older patients exhibited later onset of anorexia, this suggests that different developmental concerns may play a role in the etiology of the disorder. Similarly, Strober (1981) suggests that anorexic adolescents (mean age 15 years) have failed to acquire the autonomy, individuation, and flexibility of personality necessary to cope successfully with the developmental tasks of adolescence. Given that bulimics are struggling with many of the same issues as anorexics (e.g., body image, eating behaviors), it may be that they are also having difficulty coping with age-appropriate psychological tasks. Such an area is worthy of further investigation.

The role of menarche in the evolution of body image has also been examined. Koff, Rierdan, and Silverstone (1978) examined the human figure drawings of pre- and post-menarcheal

girls. Post-menarcheal girls produced more sexually differentiated drawings and reported a greater degree of satisfaction with their bodies than did their pre-menarcheal peers. Koff et al. suggest that it is menarche, in particular, rather than puberty, in general, that is critical in precipitating a change in body image. Indeed, Koff and her colleagues characterize the change in body image as occurring more or less sharply around the time of menarche, rather than as a continuous process throughout adolescence.

Several notes of caution must be added concerning the measurement of body image. With few exceptions, the reliability and convergent/ discriminant validity of the measures used to assess body image have not been determined (Gleghorn, Penner, Powers, & Schulman, 1987). As a result, conclusions drawn about an aspect of body image may be confounded with the particular manner in which body image was operationalized. Gleghorn et al. (1987) used the multitrait-multimethod approach to assess the relationship between measures of affect towards one's body, measures of overall body size perception, and measures of perceived size of specific body sites. They found that these measures differed in terms of reliability and construct validity, suggesting that different aspects of self-perception are being tapped.

The manner in which body image is conceptualized may affect the results in a less obvious way than the choice of measures. Experimental instructions may be framed in terms of intellectual or emotional judgment. Thompson, Dolce, Spana, and Register (1987) provided support for the differential effect of experimental instructions on body size estimation. The effect of instructions to rate body sites according to emotional judgments was associated with increased estimation of weight-related body sites (e.g., hips, thighs). Thus, experimental instructions also may confound results of body image studies and contribute to misleading comparisons across studies.

Psychological Characteristics

In addition to body-image perceptions, the psychological characteristics of bulimics also have been examined. The majority of studies in this area have utilized college-level participants, as is typical of much of the research in the eating disorder literature. There is evidence that bulimics experience significant affective instability that manifests itself in depressed and highly variable mood states, impulsive behavior, low frustration tolerance, and high levels of anxiety (Johnson & Maddi, 1986). In fact, because of its association with depression, some authors have hypothesized that bulimia itself is a form of depression with the same

biological basis as affective disorders (Herzog, 1984; Pope & Hudson, 1985). An alternative explanation is that this affective instability may be a result of the physiological side-effects of weight loss and weight loss methods, or of the psychological side-effects of maladaptive patterns of cognitions and feelings. As Thompson et al. (1987) point out, bulimics demonstrate a higher incidence of distorted cognitions related to food and weight (e.g., dichotomous thinking, worry, exaggeration, and superstitious thinking) than do non-bulimics. Such thoughts may lead to feelings of helplessness and hopelessness regarding one's inability to attain a desired body shape and may contribute to feelings of depression.

Women who are bulimic also evidence low self-esteem and low feelings of self-efficacy. These women appear to feel unable to control their internal states and, indeed, often appear to have difficulty identifying and articulating those states (Hart & Ollendick, 1984; Lewis & Johnson, 1985). Bulimics are extremely sensitive to rejection, which frequently results in feelings of social discomfort and nonassertive behavior (Boskind-Lodahl, 1976; Pyle et al., 1982). Ironically, these women also have very high expectations of themselves, which can result in shame, guilt, and self-deprecation when they are confronted with the

discrepancy between their real and ideal self (Goodsitt, 1984).

Other researchers have found similar results. For example, bulimic women show greater dieting concern, greater need for approval, lower self-esteem, greater depression, and higher self-expectations than normal controls (Katzman & Wolchik, 1984). Bulimic women also are distinguished from normal controls by a higher drive for thinness, increased dietary restraint, and a more negative self-image (Vanderheyden & Boland, 1987).

Caution needs to be used when discussing "bulimics" versus "normal controls," however. Such terms assume that there is a dichotomy of behavior when in fact there appears to be a continuum of symptom severity. Thompson et al. (1987) suggest that behavioral, affective, and cognitive indices of bulimia fall on a continuum, indicating the heterogenous nature of bulimic symptomatology. In other words, the continuum ranges from symptom-free to bulimic-like symptoms to the bulimic syndrome. Thompson and her colleagues identified a distinct bulimic-like group which may be at risk for developing the disorder. While only a longitudinal study can definitively determine whether a bulimic-like individual will later be bulimic, it seems of particular importance to research in greater detail the psychological characteristics

of bulimic-like adolescents. Research needs to determine if these young women exhibit the same psychological characteristics as older women in order to design the most appropriate prevention and treatment programs.

Family Characteristics and Peer Relationships

As discussed previously, one of the developmental tasks of adolescence is to achieve autonomy from one's family, and increased reliance on peers for support is one way in which the adolescent begins to separate from his/her family and achieve independence. Since bulimics have been hypothesized to struggle with developmental tasks, the issues of peer and familial relationships of bulimics become important. However, few studies have examined either the nature of interactions in these families or the perceptions that bulimics have about their families. The social relationships of bulimics also have received little attention.

Most studies of family interactional style have utilized self-report measures. Johnson and Flach (1985) and Ordman and Kirschenbaum (1986) have reported that, as compared with control families, families of normal weight bulimics expressed greater anger, aggression, and conflict, yet used more indirect, nonassertive methods of communicating and dealing with problems. In a comparison of the families of normal weight bulimics with families of anorexics who binged and

restrictor anorexics, Garner, Garfinkel, and Olmsted (1983) found that families of bulimics and anorexics who binged were quite similar. Both sets of families reported significant pathology in the areas of communication, affective expression, affective involvement, control, values and norms, and social desirability. Studies that utilize direct observational measures have found similar results. Humphrey (1986) and Humphrey, Apple, and Kirschenbaum (1985) reported that, as compared with a normal control group, families of anorexics who also demonstrated bulimic behavior were more belittling and less helpful, trusting, and nurturing. These parents also gave more negative, less positive, and more contradictory messages to their daughters, especially around issues of autonomy and control.

As research into the familial relationships of bulimics is still in a preliminary state, it is impossible to discuss the difficulties in their families in terms of causality. For example, disturbed family interactions may lead to a daughter becoming bulimic. Or, as has also been proposed, the strain of living with a child who has an eating disorder may create maladaptive family patterns (e.g., Kog & Vandereycken, 1989). The answer is unlikely to be a simple one, with further research clearly needed.

As adolescents begin to separate from their families and

to take control of their own lives, peer relationships typically become increasingly important. The manner in which bulimics relate to their peers has been explored in recent years. Clinical reports indicate that bulimics are socially isolated and frequently lacking in interpersonal skills (e.g., Boskind-White & White, 1983; Follansbee, personal communication, 1989), and several empirical studies have supported these contentions. Bulimic women have been found to experience significantly more social maladjustment in a variety of areas (e.g., work, social/leisure activities, relationships with extended family) than control groups of normal women (Johnson & Berndt, 1983; Norman & Herzog, 1984). In terms of interpersonal relationships, bulimic women reported difficulty in establishing adequate relationships with peers of both sexes (Lacey, Coker, & Birtchnell, 1986) and indicated that, as compared with normal controls, they had significantly fewer relatives and friends to whom they felt close (Weiss & Ebert, 1983). Jacobson & Robins (1989) reported that bulimic women expressed greater concerns about social evaluation and separation from their families than did normal controls. Bulimic women also appeared to be much more socially dependent, suggesting that they may misperceive the quality of and amount of social support that they actually receive.

The studies described above involved adult bulimic women (approximately ages 18-35). With the exception of clinical reports, very little is known about the social and peer relationships of adolescent bulimics. Since adolescence is a time of changes in the intensity and importance of these relationships, investigation into the quality of adolescent bulimics' social relationships would seem to be important.

Purpose of Present Study

The purpose of this study was to investigate specific psychological correlates of bulimia and bulimic-like behavior in high school and college females. Depression, sex-role orientation, body dissatisfaction, and developmental concerns, among other characteristics, have been suggested as possible contributing factors in the etiology of bulimia. However, there is a relative dearth of research dealing with these factors as they relate to the adolescent years, especially in terms of a developmental framework. The proposed study provides important information on characteristics of bulimia in adolescents.

Method

Subjects

Subjects were a total of 307 female students attending Blacksburg Middle School, Christiansburg Middle School, Blacksburg High School, Christiansburg High School, and Virginia Polytechnic Institute and State University. The ages of the subjects ranged from 12 to 20 ($M = 16.06$). Although socioeconomic data were not available for individual participants, a majority of the subjects were from lower middle-class to upper class families. The SES range for middle school, high school, and university participants was comparable. Middle and high school students obtained parental permission to participate in this project. (See Appendix A.) The university students received one extra class credit in return for their participation. (See Appendix B.)

Self-Report Measures

Demographic Information Sheet: The Demographic Information Sheet was styled after that suggested by Garner et al. (1983). Students were asked to indicate their age, grade, and current height and weight as well as to provide information regarding their highest and lowest past weight, ideal weight, the age at which any weight problems began, history of dieting in their immediate family, degree of participation in extracurricular activities such as organized

sports, and level of exercise. (See Appendix C.)

Bulimia Test: The BULIT (Smith & Thelen, 1984) was used to assess bulimic behavior in all subjects. (See Appendix D.) The BULIT consists of 36 items that assess the behavioral and affective components of bulimia, and covers every criterion area discussed in DSM-III, with the exception of criteria to rule out a diagnosis of anorexia nervosa.

Each item of the BULIT is rated on a 5-point scale. A total score is then computed, with scores above 101 considered indicative of bulimia. A more liberal cut-off score of 88 has also been suggested by Smith and Thelen (1984), to be used when the BULIT is used as a screening instrument in order to identify actual as well as at-risk cases of bulimia.

The initial validation and reliability studies (Smith & Thelen, 1984) showed that the BULIT is a reliable and valid method of identifying individuals with characteristics of bulimia. The BULIT was correlated .93 with the Binge Scale and .68 with the EAT, suggesting that there are underlying similar constructs. In addition, a validity coefficient of .54 was obtained by correlating total BULIT score with group membership (bulimic or nonbulimic) based on independent rater judgement. Correct classification of subjects was higher for subjects who were clinically identified as bulimic as opposed to subjects who were in the nonclinical sample. In discussing

this difference, Smith and Thelen reported that the BULIT appeared to be sensitive to and a reliable indicator of changes over time in the level of severity of bulimic symptoms. Overall test-retest reliability was found to be .87. Wertheim (1989) reported that the BULIT correlated .57 with the Revised Restraint Scale, and that Cronbach's alpha was .98.

Thelen, McLaughlin-Mann, Pruitt, and Smith (1987) determined that the BULIT was composed of six separate factors: binge behavior, vomiting, negative feelings regarding overeating, menstruation problems, preference for high-caloric easily ingested food, and weight fluctuations. Westheim (1989) and Stein and Brinza (1989) found similar factors. In addition, Stein and Brinza extended previous research by assessing the factor structure of the BULIT with junior high and high school students, as well as with college students. The factor structure was found to be consistent across the various student samples, with the exception of the binge behavior factor. Junior high students tended to overacknowledge binge items because of misperceptions regarding the clinical meaning of bingeing. Binge items were responded to as though bingeing and overeating were equivalent. Stein and Brinza concluded that BULIT items which focus on bingeing may be useful in assessing that particular problem in

college women, but may be less valid in assessing bingeing in younger females.

Eating Disorder Inventory: The EDI (Garner & Olmsted, 1983) was used to assess students' eating behaviors and related psychological characteristics. (See Appendix E.) The EDI contains 64 items and can be used with respondents as young as 12 years of age (Garner & Olmsted, 1983). Each item is responded to on a six-point, forced-choice scale which ranges from "never" to "always." The EDI consists of eight subscales relevant to anorexia nervosa and bulimia. Drive for Thinness, Bulimia, and Body Dissatisfaction measure attitudes and/or behaviors related to eating and body shape. Ineffectiveness, Interpersonal Distrust, Perfectionism, Interoceptive Awareness, and Maturity Fears measure related characteristics which have been identified as central to anorexia nervosa and bulimia.

The EDI has been used in both clinical and nonclinical samples as a preliminary screening tool for anorexia nervosa and bulimia. Nonclinically, the EDI has proven useful as a means of indicating those individuals who are excessively preoccupied with weight (e.g., Garner, Olmsted, Polivy, & Garfinkel, 1984). For example, Garner et al. (1984) identified college women as weight-preoccupied if their Drive for Thinness score was at or above the mean score for the

anorexia nervosa patients assessed by Garner and Olmsted (1983). Clinically, the EDI also is useful in differentiating between groups which have a high incidence of eating problems and groups which have a less pathological manner of eating (Garner & Olmsted, 1983).

As each of the separate dimensions of the EDI were originally conceptualized as occurring on a continuum, the use of cut-off scores to determine varying degrees of pathology should be viewed with caution. Garner & Olmsted (1983) discuss the use of a conservative method whereby only scores at or above the mean of a particular subscale are considered pathological. However, they suggest that other researchers may wish to select other methods of determining cut-off points.

Garner and Olmsted (1983) report an internal consistency coefficient above .80 for all subscales. The average item-total scale correlation is .63, with a standard deviation of .13. Test-retest reliability has not been reported.

Self-reported patient profiles on the EDI have been compared with the judgments of experienced clinicians familiar with the patient in order to assess criterion-related validity. Correlations on all subscales were significant at the $p < .001$ level. Criterion-related validity was also established by demonstrating differences between restrictor

and bulimic anorexic nervosa patients. Theoretically, these two groups should be expected to differ on several subscales. Even when the higher average weight of the bulimic subtype is controlled for, bulimic anorexia nervosa patients score higher than restrictors on Drive for Thinness, Ineffectiveness, and Interoceptive Awareness subscales.

Convergent and discriminant validity of the EDI also have been demonstrated. Subscales of the EDI correlate moderately to highly with available measures of psychological characteristics hypothesized to be conceptually related to anorexia nervosa and bulimia. For example, the Drive for Thinness subscale correlates .71 with the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) and .57 with the Beck Depression Inventory (BDI; Beck, 1978). The Body Dissatisfaction subscale correlates .66 with a measure of dissatisfaction with maturational regions (Garner et al., 1983). The Maturity Fears subscale and the BDI correlate .39, a more moderate correlation. However, Garner and Olmsted (1983) state that large correlations are undesirable, as none of the EDI subscales are intended to be redundant with existing psychological measures.

The EDI demonstrates discriminant validity in that the EAT and EDI are highly correlated on only two of their respectively similar subscales. Such a finding is to be

expected, as the EAT measures a range of symptoms, whereas the EDI measures the more cognitive and behavioral components of anorexia nervosa and bulimia.

Children's Personal Attributes Questionnaire-Short Form (CPAQ): The CPAQ (Hall & Halberstadt, 1980) was used to assess the sex-role orientation of all subjects. (See Appendix F.) It consists of 21 items describing personal characteristics (e.g., "I like meeting and talking to new people," and "I am a gentle person") and is divided into three subscales labeled Masculinity (M), Femininity (F), and Masculinity-Femininity (MF). Respondents rate themselves on a four-point scale and separate scores are determined for each of the three scales. Subjects then are assigned to four mutually exclusive gender-role groups called androgynous, masculine-typed, feminine-typed, and undifferentiated using median splits on the masculine and feminine scales following the procedure developed by Spence and Helmreich (1978).

The CPAQ is a downward extension of the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978). Spence and Helmreich conceptualized the subscales of the PAQ as relating to instrumental, agentic characteristics (M subscale) and expressive, communal characteristics (F subscale). The MF subscale consists of both agentic and communal characteristics. The items on the PAQ and CPAQ were

designed to assess traits that are widely believed to be desirable to some degree in both males and females, but are more stereotypically characteristic of one sex (e.g., independence, gentleness). The MF scale consists of items whose social desirability appears to vary between the sexes (e.g., aggressiveness is considered more acceptable in males than in females). Spence (1982) states that her research has shown little or no relationship between the PAQ and sex-role attitudes, global images of one's masculinity or femininity, or with sex-role preference. Extending the use of the PAQ and, correspondingly, the CPAQ beyond this is inappropriate.

Correlations between the CPAQ and the PAQ (Hall & Halberstadt, 1980) indicate that the two are strongly related (Masculine=.73, Feminine=.72). Correlations between the short and full scale versions of the CPAQ have ranged from .58 to .61 for the masculine and feminine subscales, respectively. Internal consistency of the CPAQ is .66 and .72 for the masculine and feminine subscales, respectively. Retest reliability after one year was .47 (masculine) and .39 (feminine).

For the present study, an alternative means of determining sex-role orientation was used due to the small number of subjects in some cells (e.g., cross-typed females). Bobko and Schwartz (1984) discuss the merits of considering

the concept of psychological androgyny as a continuous variable, rather than considering masculinity and femininity as theoretically independent dimensions (e.g., Bem, 1974). Problems with the median split method include a lessening of power for detecting interactions with other measures (Flaherty & Dusek, 1980); a general clustering of scores around the mean, so that any slight change in that mean will affect individuals' sex-role classifications (Bobko & Schwartz, 1984); and the fact that, since androgyny scores are based on the mean of the current sample being analyzed, the same individual's classification may change if he/she is placed in a second, different sample (LaFrance & Carmen, 1980). A continuous index of androgyny overcomes these problems.

The equation developed by Bobko & Schwartz (1984) is as follows: $\text{Androgyny} = [(k-1) - X-Y] * [(X+Y)/2]$ with k = the range in values of the scales of the instrument used, X = score on the masculine scale, and Y = score on the feminine scale. The equation yields scores ranging from high in androgyny to low in androgyny and is suitable for use in regression analyses. Bobko and Schwartz (1984) suggest that this index will yield a more sensitive measure of androgyny than categorizing methods.

Offer Self-Image Questionnaire for Adolescents (OSIQ):

The OSIQ (Offer, Ostrov, & Howard, 1977) was used to

measure the self-concept, including developmental concerns, of the students. (See Appendix G.) The OSIQ is appropriate for use with individuals aged 13 to 19. It consists of 130 items that assess functioning in eleven different areas (impulse control, emotional tone, body and self-image, social relationships, morals, sexual attitudes, family relationships, mastery of the external world, vocational and educational goals, psychopathology, and superior adjustment). Due to concern by the Blacksburg and Christiansburg area school boards, three items assessing the students' feelings about their level of physical development were deleted, leaving a total of 127 items.

Each item is answered on a six-point scale ranging from "does not describe me at all" on one end of the scale to "describes me very well" at the other end. Half of the items are written positively and the other half negatively and are scored in such a way that higher scores indicate poorer adjustment. Raw scores are then converted into standard scores using the appropriate age- and sex-group norms.

The internal consistency of the eleven subscales of the OSIQ ranges from .36 to .88 (Offer, Ostrov, & Howard, 1982). Six-month test-retest reliability was found to be between .48 and .84 (Offer et al., 1982). Offer (1969) also reported on the stability of the constructs measured by the OSIQ, stating

that over an eight year period normal adolescents remained consistent in their original OSIQ scores. Moderate to high correlations have been found between the OSIQ and other measures of personality such as the Minnesota Multiphasic Personality Inventory (Coche & Taylor, 1974) and the Bell Inventory (Offer, 1969).

Beck Depression Inventory (BDI): The BDI (Beck, 1978) was used to assess the degree of depression in all subjects. (See Appendix H.) It is a clinically derived self-report inventory of depression originally designed for use with psychiatric populations, and was constructed to assess the current depth of depression, whether or not depression is viewed as the primary diagnosis. The BDI consists of 21 items that assess the affective, cognitive, motivational, and physiological components of depression. Each item is rated from 0 to 3, with higher scores being indicative of greater depression. According to Beck, cut-off scores are as follows: 0-9, not depressed; 10-15, mildly depressed; 16-23, moderately depressed; 24-63, severely depressed.

Beck et al. (1961) reported two validation studies of the BDI. Both studies utilized a psychiatric population which was administered the BDI and then assessed for depth of depression through an interview with staff psychiatrists. Biserial correlations between the BDI and the assessment of depth of

depression was .65 in the first study, and .67 in the second.

The BDI has also been validated for use with a college population. Bumberry, Oliver, and McClure (1978) administered the BDI to college undergraduates and graduate students, then rated depression based on a psychiatric interview. There was a .77 correlation between the BDI and psychiatrists' rating of depression. Test-retest reliability was found to be .30 after a time lapse of 1 to 14 days. However, Bumberry et al. (1978) point out that this is consonant with Beck's view of depression as a state, rather than a trait.

In recent years, the BDI has begun to be evaluated for its use with adolescent populations. Chiles, Miller, and Cox (1977) used the BDI as a measure of depression in adolescents aged 13-15. They reported that the language, but not the content, of two of the items was modified in order to make them more easily understood by the adolescents. Unfortunately, they did not report which items were modified, or in what way. Strober, Green, and Carlson (1981) assessed the utility of the BDI by administering it to adolescents (aged 12 years, 10 months to 16 years, 9 months) on an inpatient ward of a psychiatric hospital. Subjects were all of average IQ and were free of organic brain dysfunction. After completion of the BDI, the adolescents were rated by a psychiatrist for degree of manifest symptomatology. Strober et al. (1981)

found that there were no differences between the sexes on the BDI, nor were there any significant correlations with age of subject. Internal reliability was found to be .79. Further evidence of homogeneity of the BDI was found in the average item-total score correlation of .68. Test-retest reliability after 5 days was .69, reflecting the severity and apparent stability of pathology seen in the inpatient population. Strober et al. (1981) also found a .67 correlation between BDI score and psychiatrist rating, and reported that BDI score correctly classified 81% of the sample.

Procedure

Each student completed the demographic information sheet followed by the five questionnaires. Middle- and high-school students received the questionnaires in either their physical education or health class and were asked to complete them at home in order to encourage accurate responses. College freshmen received the questionnaires at the beginning of an undergraduate psychology class and also were asked to complete the questionnaires at home. Envelopes were provided in order to ensure confidentiality of responses and instructions for the return of the questionnaires were given. The return rate was 44% for the middle school subjects, 47% for the high school subjects, and 59% for the university subjects.

Hypotheses

Subjects were divided into three age groups: 12-14 years of age, 15-17 years of age, and 18-20 years of age. Two separate categorization assignments of subjects based on scores on the Bulimia Test (BULIT; Smith & Thelen, 1984) were made. For the majority of the analyses, the BULIT was divided into thirds so that the three groups (high, middle, and low scores on the BULIT) contained approximately one hundred subjects each. Subjects in the three groups were characterized as being at high risk, intermediate risk, and low risk for developing bulimia. For the purposes of the discriminant function analysis, as well as the exploratory analyses, those subjects who scored above the cut-off point of 88 on the BULIT were categorized as bulimic ($n=25$), as suggested by Smith and Thelen, and were matched on age, height, and weight with an equivalent number of subjects who scored in the middle range of scores on the BULIT. These subjects were categorized as nonbulimic in accordance with Smith and Thelen's recommendations.

1. Subjects at high risk for bulimia across age groups will exhibit a higher degree of depression, a lower level of self-efficacy, and will present as less androgynous than low risk subjects, as measured respectively by the Beck Depression Inventory (Beck, 1978), the Ineffectiveness subscale of the

EDI (Garner & Olmsted, 1983), and Children's Personal Attributes Questionnaire (Hall & Halberstadt, 1980).

2. Across all age groups, subjects at high risk for developing bulimia will express more interpersonal, familial, and developmental concerns than subjects at a low risk for bulimia, as measured by the Offer Self-Image Questionnaire (Offer, Ostrov, & Howard, 1977) and the Eating Disorders Inventory (Garner & Olmsted, 1983).

3. There will be a significant difference between the concerns of high risk subjects at different developmental levels. Specifically, younger adolescents (ages 12-14) who exhibit characteristics of bulimia will express more concern over body shape and interpersonal issues than will older, high risk adolescents (ages 18-20). Moreover, older adolescents who are at high risk for bulimia will express more concern over individuation/separation from family and autonomy issues than will younger, high risk adolescents.

4. Intercorrelations between the measures will be expected. For example, the BULIT (Smith & Thelen, 1984) will be expected to correlate in a positive direction with the Thinness and Bulimia subscales of the EDI (Garner & Olmsted, 1983). The BDI is expected to correlate positively with the BULIT, as are the Family Attitude and Social Relationships subscales of the Offer and Maturity Fears and Body

Dissatisfaction subscales of the EDI.

5. Subjects are expected to be accurately classified as bulimic or nonbulimic based on their scores on the Beck Depression Inventory and the Bulimia, Drive for Thinness, Body Dissatisfaction, Ineffectiveness, and Interoceptive Awareness subscales of the EDI.

6. Bulimic subjects will present as more distressed than nonbulimic subjects in the areas of depression, self-efficacy, and interpersonal, familial, and developmental concerns.

Results

Reliability

Table 1 presents the internal consistency data for each of the 24 scales used in the data analyses. Cronbach's alpha was computed both across and within age groups and generally ranged from .60 to .94. Cronbach's alphas for the FM subscale of the CPAQ and for the Impulse Control subscale of the Offer were consistently low across the age groups (ranging between .30 and .41), indicating that interpretation of results pertaining to these subscales should be made with caution.

Within each of the age groups (see Table 2), several other subscales also should be interpreted cautiously. Within the 12-14 year-old age group, the Morals (.46) and Educational Goals (.57) subscales of the Offer and the Perfectionism (.58) subscale of the EDI showed relatively poor internal consistency. The Interoceptive Awareness subscale of the EDI also demonstrated poor internal consistency at the 15-17 year-old age group (.47) and the 18-20 year-old age group (.56). The majority of subscales, however, are sufficiently reliable for interpretation.

Subject Characteristics

Table 3 presents the means and standard deviations for the age, height, weight, body mass index, ideal weight, and time (in minutes) spent exercising each week for all

TABLE 1

Internal Consistency of All Measures

| <u>Scale</u> | <u>Cronbach's Alpha</u> |
|----------------------------|-------------------------|
| BULIT | .94 |
| CPAQ | |
| Femininity | .70 |
| Masculinity | .69 |
| Femininity- Masculinity | .31 |
| BDI | .91 |
| EDI | |
| Thinness | .83 |
| Bulimia | .84 |
| Body | |
| Dissatisfaction | .90 |
| Ineffectiveness | .87 |
| Perfectionism | .75 |
| Interpersonal | |
| Distrust | .80 |
| Interoceptive | |
| Awareness | .62 |
| Maturity Fears | .71 |
| Offer | |
| Impulse Control | .41 |
| Emotional Tone | .69 |
| Self and Body Image | .81 |
| Social Relationships | .74 |
| Morals | .62 |
| Educational Goals | .64 |
| Sexual Attitudes | .68 |
| Family Attitudes | .88 |
| Mastery of the | |
| External World | .76 |
| Psychopathology | .86 |
| Superior Adjustment | .65 |

TABLE 2
Internal Consistency of All Scales
Within Age Groups

| Scale | <u>Cronbach's Alpha</u> | | |
|----------------------------------|-------------------------|--------------------|--------------------|
| | <u>12-14 years</u> | <u>15-17 years</u> | <u>18-20 years</u> |
| BULIT | .94 | .92 | .94 |
| CPAQ | | | |
| Femininity | .78 | .60 | .68 |
| Masculinity | .63 | .71 | .67 |
| Femininity-Masculinity | .43 | .17 | .34 |
| BDI | .91 | .92 | .84 |
| EDI | | | |
| Thinness | .80 | .82 | .85 |
| Bulimia | .76 | .62 | .85 |
| Body Dissatisfaction | .91 | .91 | .89 |
| Ineffectiveness | .87 | .88 | .80 |
| Perfectionism | .58 | .82 | .80 |
| Interpersonal Distrust | .74 | .82 | .82 |
| Interoceptive Awareness | .62 | .48 | .57 |
| Maturity Fears | .67 | .63 | .81 |
| Offer | | | |
| Impulse Control | .35 | .39 | .34 |
| Emotional Tone | .62 | .73 | .72 |
| Self and Body Image | .77 | .84 | .84 |
| Social Relationships | .69 | .71 | .81 |
| Morals | .46 | .67 | .72 |
| Educational Goals | .57 | .70 | .61 |
| Sexual Attitudes | .61 | .73 | .72 |
| Family Attitudes | .86 | .89 | .88 |
| Mastery of the External World | .73 | .78 | .74 |
| Psychopathology | .79 | .86 | .90 |
| Superior Adjustment | .60 | .71 | .67 |

TABLE 3
 Subject Characteristics Across Ages and
 Within Age Groups

| <u>Variable</u> | <u>All Subjects</u> N=285 | <u>12-14 years</u> N=90 | <u>15-17 years</u> N=96 | <u>18-20 years</u> N=99 |
|-----------------|------------------------------|----------------------------|----------------------------|----------------------------|
| Age | | | | |
| <u>M</u> | 16.06 | 13.04 | 15.81 | 19.05 |
| <u>SD</u> | 2.58 | .86 | .78 | .76 |
| Height | | | | |
| <u>M</u> | 64.14 | 63.07 | 64.58 | 64.66 |
| <u>SD</u> | 2.88 | 3.12 | 2.91 | 2.40 |
| Weight | | | | |
| <u>M</u> | 121.54 | 110.42 | 123.69 | 129.22 |
| <u>SD</u> | 21.16 | 17.77 | 23.15 | 17.70 |
| Body Mass Index | | | | |
| <u>M</u> | 20.83 | 19.63 | 20.94 | 21.75 |
| <u>SD</u> | 3.14 | 2.75 | 3.59 | 2.64 |
| Ideal Weight | | | | |
| <u>M</u> | 114.10 | 106.17 | 115.84 | 119.11 |
| <u>SD</u> | 14.00 | 13.55 | 13.99 | 11.36 |
| Exercise | | | | |
| <u>M</u> | 146.52 | 154.38 | 157.75 | 128.50 |
| <u>SD</u> | 219.87 | 229.16 | 262.65 | 158.27 |

subjects, as well as for subjects by age group.

Of all subjects, 15% (n=45) participated in 4 or more extracurricular activities, 31% (n=92) were currently dieting, and 45% (n=134) reported that someone in their immediate family (i.e., parents and/or siblings) was actively dieting. Of subjects aged 12-14, 16.8% (n=15) participated in 4 or more extracurricular activities, 23% (n=20) were currently dieting, and 46% (n=28) reported that someone in their immediate family was actively dieting. In the 15-17 year old age group, 23% (n=22) participated in 4 or more extracurricular activities, 30% (n=28) were currently dieting, and 47% (n=44) indicated that someone in their immediate family was dieting. Finally, in the 18-20 year old age group, 8% (n=8) were involved in 4 or more extracurricular activities, 40% (n=39) were actively dieting, and 44% (n=43) reported that someone in their family was currently dieting.

Preliminary Analyses

A one-way univariate analysis of variance was carried out in order to determine if there were significant differences between the subjects at each of the three levels of the BULIT (low, middle, and high). Age and body mass index were the dependent variables examined. The means for each level of the BULIT and results of the analysis of variance are presented in Table 4.

TABLE 4
Means and Results of ANOVA for
Age, Weight, and Height

| <u>Outcome Measures</u> | <u>Low</u> N=88 | <u>Middle</u> N=84 | <u>High</u> N=98 | <u>F</u> ^a | <u>p</u> |
|-------------------------|--------------------|-----------------------|---------------------|-----------------------|----------|
| Age | | | | | |
| <u>M</u> | 15.06 ^c | 16.86 ^b | 16.56 ^b | 13.65 | .0001 |
| <u>SD</u> | 2.44 | 2.43 | 2.48 | | |
| Body Mass Index | | | | | |
| <u>M</u> | 19.75 | 20.32 | 21.89 | 1.83 | .1875 |
| <u>SD</u> | 2.38 | 3.43 | 2.59 | | |

^adf = 2,267

b>c; p<.05, as determined by Student-Newman-Keuls

There were significant differences between subjects at each level of the BULIT on age only [$F(2,284)=9.46, p<.0001$], with the Student-Newman-Keuls test identifying the nature of those differences ($p<.05$). Subjects receiving high and moderate scores on the BULIT were significantly older than subjects who scored in the low group.

Primary Data Analyses

For each questionnaire, a series of 3 X 3 (age group X BULIT group) multivariate analyses of variance (MANOVAs) were conducted in order to address the hypothesis that the intrapsychic, interpersonal, and familial concerns of subjects at high risk for bulimia would differ within developmental levels. The 3 X 3 MANOVAs also were used to address the hypotheses that high risk subjects of all ages would exhibit more depression, lower self-efficacy, lower androgyny, and more intrapsychic, interpersonal, and familial concerns than low risk subjects. Regression analyses across and within age groups and a discriminant function analysis also were performed to explore these relationships in greater detail.

3 X 3 ANOVAs/MANOVAs

In order to determine if age level interacted with level of risk for bulimia, a 3 X 3 analysis of variance with two between subjects variables (age group and BULIT group) was conducted on BULIT scores. The means and results for the main

effects are shown in Table 5 and the interaction results are shown in Table 6.

There was a significant main effect for BULIT group [$F(2,271)=289.53, p<.0001$]. Mean scores in the high risk group were, of course, higher than mean scores in the intermediate and low risk groups. Scores in the intermediate risk group were also higher than scores in the low risk group. These differences support the assignment of subjects to these risk group categories. There were no age or interaction effects.

A 3 X 3 analysis of variance with two between subjects variables (age group and BULIT group) was conducted in order to assess the effect of age and degree of bulimic behavior on level of depression, as measured by the BDI. Means and results of the main effects are shown in Table 7 and the interaction effects in Table 8.

There were main effects for age group [$F(2,269)=9.16, p<.0001$] and BULIT group [$F(2,269)=29.85, p<.0001$] on the BDI. Students in the 15-17 year old age group were significantly more depressed than students in the 12-14 year old and 18-20 year old age groups ($p<.05$, as determined by Student-Newman-Keuls). Also, students who scored in the high risk group on the BULIT reported being more depressed than did students in the intermediate and low risk BULIT groups ($p<.05$, as

TABLE 5
Means and Results of 3 X 3 ANOVA for
BULIT Score

| <u>Measure</u> | <u>Age Group</u> | | | <u>BULIT Group</u> | | | | | | |
|----------------|-----------------------------|-----------------------------|-----------------------------|----------------------|----------|---------------------------|------------------------------|-----------------------------|----------------------|----------|
| | <u>12-14</u> <u>N=87</u> | <u>15-17</u> <u>N=94</u> | <u>18-20</u> <u>N=99</u> | <u>F^a</u> | <u>p</u> | <u>Low</u> <u>N=91</u> | <u>Middle</u> <u>N=88</u> | <u>High</u> <u>N=101</u> | <u>F^a</u> | <u>p</u> |
| BULIT | | | | | | | | | | |
| <u>M</u> | 52.58 ^c | 55.04 ^c | 61.84 ^b | 1.70 | .1851 | 39.78 ^d | 51.14 ^c | 76.73 ^b | 289.53 | .0001 |
| <u>SD</u> | 19.14 | 16.26 | 19.90 | | | 3.96 | 4.00 | 16.43 | | |

^adf=2,271

b>c; p<.05, as determined by Student-Newman-Keuls

c>d; p<.05, as determined by Student-Newman-Keuls

TABLE 6

Interaction Means and Results for
3 X 3 ANOVA on BULIT Score

| Measure | 12-14 years old | | | 15-17 years old | | | 18-20 years old | | | F ^a | P |
|---------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|----------------|-------|
| | Low BULIT N=45 | Middle BULIT N=16 | High BULIT N=26 | Low BULIT N=28 | Middle BULIT N=34 | High BULIT N=32 | Low BULIT N=18 | Middle BULIT N=38 | High BULIT N=43 | | |
| BULIT | | | | | | | | | | | |
| M | 39.18 | 50.88 | 76.81 | 40.14 | 50.62 | 72.78 | 40.72 | 51.71 | 79.63 | 1.02 | .3966 |
| SD | 4.72 | 4.12 | 16.57 | 3.31 | 3.87 | 14.85 | 2.61 | 4.05 | 17.30 | | |

^adf=4,271

TABLE 7
Means and Results of 3 X 3 ANOVA for
the Beck Depression Inventory

| Measure | Age Group | | | BULIT Group | | | F ^a | P |
|---------|---------------------|---------------------|---------------------|-------------------|-------------------|--------------------|----------------|-------|
| | 12-14 years N=87 | 15-17 years N=92 | 18-20 years N=99 | Low N=91 | Middle N=86 | High N=101 | | |
| BDI | | | | | | | | |
| M | 8.25 ^c | 11.23 ^b | 6.60 ^c | 5.60 ^c | 6.72 ^c | 13.03 ^b | 29.85 | .0001 |
| SD | 9.19 | 10.14 | 5.34 | 6.23 | 5.77 | 10.40 | | |

^adf = 2,269

b>c; p<.05, as determined by Student-Newman-Keuls

TABLE 8

Interaction Results for 3 X 3 ANOVA for
the Beck Depression Inventory

| Measure | 12-14 years | | | 15-17 years | | | 18-20 years | | | F ^a | p |
|-----------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|----------------|-------|
| | Low BULIT N=45 | Middle BULIT N=16 | High BULIT N=26 | Low BULIT N=28 | Middle BULIT N=32 | High BULIT N=32 | Low BULIT N=18 | Middle BULIT N=38 | High BULIT N=43 | | |
| BDI | 4.63 | 6.13 | 16.31 | 7.89 | 9.03 | 16.34 | 5.17 | 5.03 | 8.58 | 2.70 | .0310 |
| <u>M</u> | 5.13 | 5.93 | 11.23 | 8.43 | 6.34 | 12.31 | 3.60 | 4.38 | 6.09 | | |
| <u>SD</u> | | | | | | | | | | | |

^adf=4, 269

determined by Student-Newman-Keuls).

There was also a significant interaction between age group and BULIT group [$F(4,269)=2.70, p<.03$] for the BDI. (See Figure 1). Subjects in the high BULIT group who were between 12-17 years of age presented as significantly more depressed than did similar aged subjects in the middle and low BULIT groups ($p<.05$, as determined by Student-Newman-Keuls).

The relationship between age and bulimic behavior and androgyny was assessed by a 3 X 3 analysis of variance with two between subjects variables (age group and BULIT group). Means and results of the main effects are shown in Table 9, and interaction results are shown in Table 10. Significant main effects for age group [$F(2,270)=3.93, p<.02$] and BULIT group [$F(2,270)=3.78, p<.02$] were found. As determined by Student-Newman-Keuls ($p<.05$), subjects aged 18-20 were more androgynous than subjects aged 12-14, and subjects who scored in the moderate range on the BULIT were more androgynous than subjects who scored high on the BULIT. An interaction effect was not obtained.

The hypothesis that there would be a difference between the psychological and developmental concerns of bulimic and nonbulimic subjects at different ages was addressed by way of two 3 X 3 multivariate analyses of variance with two between subjects variables (age group and BULIT group). Because of

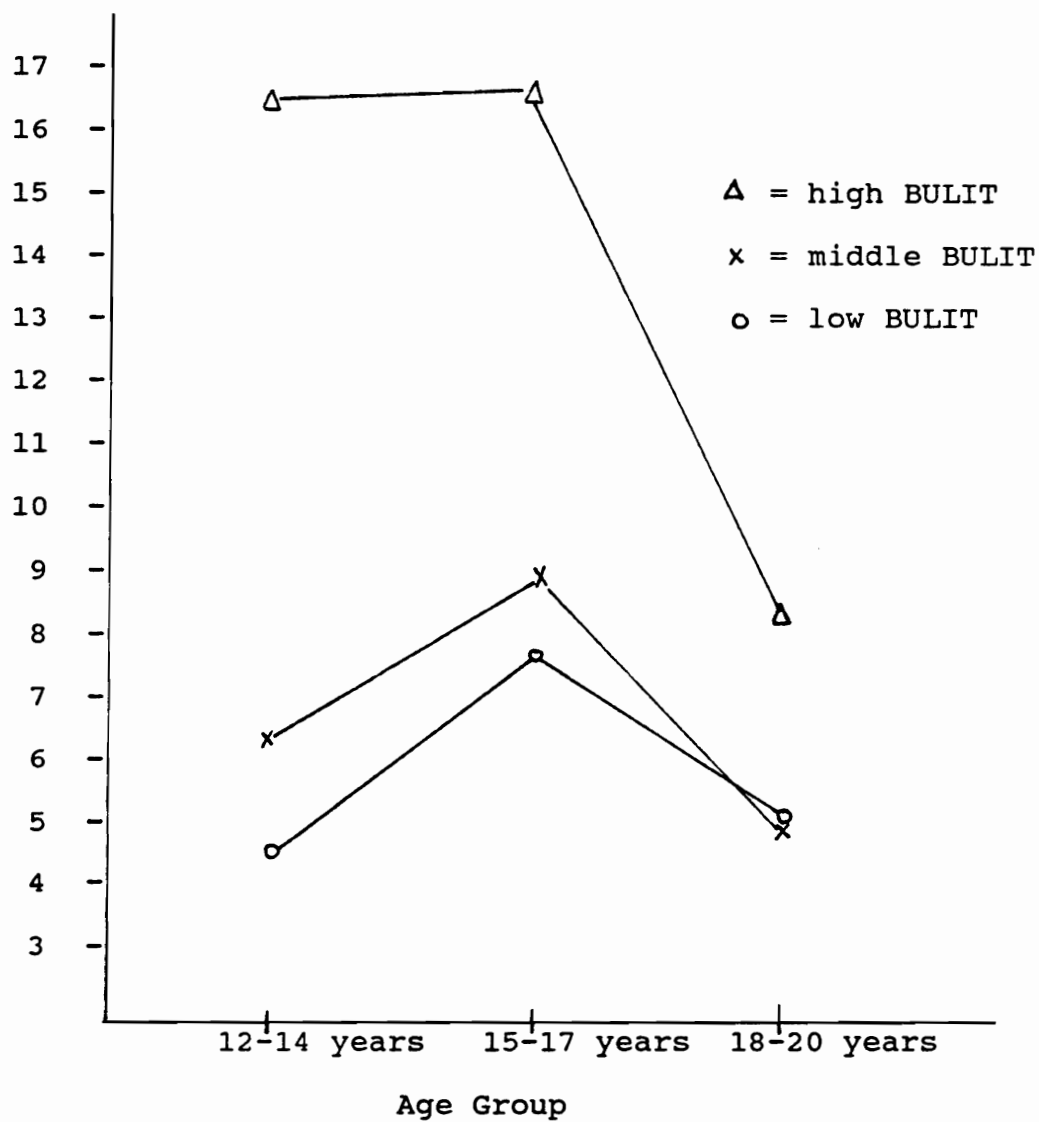


Figure 1

Age Group by BULIT Group Interaction for
Beck Depression Inventory

TABLE 9

Means and Results of 3 X 3 ANOVA for
Level of Androgyny

| <u>Measure</u> | <u>Age Groups</u> | | | <u>F^a</u> | <u>p</u> | <u>BULIT Groups</u> | | | <u>F^a</u> | <u>p</u> |
|----------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------|----------|---------------------------|------------------------------|-----------------------------|----------------------|----------|
| | <u>12-14 years</u> <u>N=86</u> | <u>15-17 years</u> <u>N=94</u> | <u>18-20 years</u> <u>N=99</u> | | | <u>Low</u> <u>N=91</u> | <u>Middle</u> <u>N=87</u> | <u>High</u> <u>N=101</u> | | |
| Androgyny | | | | | | | | | | |
| <u>M</u> | 9.93 ^c | 10.46 | 11.77 ^b | 3.93 | .02 | 10.99 | 11.57 ^b | 9.86 ^c | 3.78 | .02 |
| <u>SD</u> | 5.42 | 5.29 | 4.86 | | | 4.82 | 4.64 | 5.94 | | |

^adf = 2,270

b>c; p<.05, as determined by Student-Newman-Keuls

TABLE 10
Interaction Results of 3 X 3 ANOVA for
Level of Androgyny

| Measure | 12-14 years old | | | 15-17 years old | | | 18-20 years old | | | F ^a | P |
|-----------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|----------------|-------|
| | Low BULIT N=45 | Middle BULIT N=15 | High BULIT N=26 | Low BULIT N=28 | Middle BULIT N=34 | High BULIT N=32 | Low BULIT N=18 | Middle BULIT N=36 | High BULIT N=43 | | |
| Androgyny | 11.06 | 10.88 | 7.44 | 9.67 | 12.04 | 9.47 | 12.89 | 11.43 | 11.61 | 2.15 | .0753 |
| SD | 4.19 | 6.40 | 6.14 | 5.54 | 4.33 | 5.82 | 4.86 | 4.12 | 5.48 | | |

^adf=4, 270

multiple dependent variables, the Bonferroni test was used to control the experiment-wise error rate. The subscales of the Offer and the EDI were the dependent variables and will be addressed separately.

The 3 X 3 multivariate analysis of variance for the subscales of the Offer was found to be significant for age group [$F(22,520)=2.95, p<.0001$], BULIT group [$F(22,520)=4.35, p<.0001$], and the interaction of age group and BULIT group [$F(44,997)=1.38, p<.05$] as determined by the Wilks' Lambda Criterion. Table 11 contains the means and results for the main effects and Table 12 presents the interaction results.

There was a significant main effect for age group for Impulse Control [$F(2,270)=11.01, p<.0001$], Emotional Tone [$F(2,270)=7.85, p<.0005$], Morals [$F(2,270)=5.75, p<.005$], Educational Goals [$F(2,270)=4.42, p<.01$], Family Attitudes [$F(2,270)=8.76, p<.0002$], Psychopathology [$F(2,270)=6.34, p<.002$], and Superior Adjustment [$F(2,270)=4.07, p<.02$].

Younger subjects (ages 12-17) experienced more distress in their familial relationships, showed more signs of psychopathology, were more impulsive, and were less affectively stable than older subjects (ages 18-20). Similarly, subjects aged 12-14 had more inappropriate attitudes towards morality and the value of work and were less well adjusted than subjects aged 18-20 ($p<.05$, as determined

TABLE 11
Means and Results of Univariate Analyses for
Subscales of the Offer

| Measures | Age Groups | | | | BULIT Groups | | | | F ^a | P |
|----------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|----------------|----------------|---|
| | 12-14 years N=86 | 15-17 years N=94 | 18-20 years N=99 | 18-20 years N=91 | Low N=87 | Middle N=87 | High N=101 | F ^a | | |
| Impulse Control | | | | | | | | | | |
| M | 25.65 ^b | 25.46 ^b | 21.89 ^c | 11.01 | 22.75 ^c | 23.28 ^c | 26.45 ^b | 12.65 | .0001 | |
| SD | 7.61 | 6.76 | 6.25 | 6.41 | 7.39 | 6.60 | | | | |
| Emotional Tone | | | | | | | | | | |
| M | 24.92 ^b | 26.18 ^b | 22.14 ^c | 7.85 | 22.16 ^c | 22.89 ^c | 27.60 ^b | 16.76 | .0001 | |
| SD | 8.49 | 8.45 | 7.16 | 7.54 | 8.12 | 7.93 | | | | |
| Self and Body Image | | | | | | | | | | |
| M | 26.13 | 26.70 | 25.15 | 2.55 | 23.28 ^c | 23.57 ^c | 30.38 ^b | 27.30 | .0001 | |
| SD | 8.29 | 8.34 | 7.37 | 7.42 | 6.97 | 7.59 | | | | |
| Social Relationships | | | | | | | | | | |
| M | 21.84 | 22.57 | 21.65 | 0.50 | 21.21 ^c | 20.78 ^c | 23.81 ^b | 5.15 | .0064 | |
| SD | 8.10 | 7.49 | 6.68 | 6.87 | 7.20 | 6.88 | 7.62 | | | |
| Morals | | | | | | | | | | |
| M | 23.41 ^b | 22.67 | 20.69 ^c | 5.75 | 22.21 | 21.75 | 22.56 | 0.76 | .4672 | |
| SD | 5.38 | 6.67 | 5.56 | 5.54 | 6.45 | 5.80 | | | | |
| Educational Goals | | | | | | | | | | |
| M | 20.88 ^b | 19.42 | 18.13 ^c | 4.42 | 19.52 | 18.06 ^c | 20.50 ^b | 3.48 | .0321 | |
| SD | 7.17 | 6.64 | 5.14 | 6.45 | 5.67 | 6.50 | | | | |
| Sexual Attitudes | | | | | | | | | | |
| M | 27.21 | 25.20 | 24.47 | 2.72 | 26.41 | 24.75 | 25.50 | 0.13 | .8824 | |
| SD | 7.03 | 7.20 | 6.72 | 6.80 | 7.03 | 7.24 | | | | |
| Family Attitudes | | | | | | | | | | |
| M | 43.09 ^b | 44.87 ^b | 36.69 ^c | 8.76 | 39.30 ^c | 39.08 ^c | 45.35 ^b | 8.13 | .0004 | |
| SD | 14.82 | 15.79 | 12.29 | 14.14 | 12.94 | 15.88 | | | | |
| Mastery | | | | | | | | | | |
| M | 24.31 | 24.96 | 23.59 | 1.29 | 23.19 ^c | 22.83 ^c | 26.50 ^b | 8.23 | .0003 | |
| SD | 7.41 | 7.82 | 6.47 | 7.03 | 7.16 | 6.97 | | | | |
| Psychopathology | | | | | | | | | | |
| M | 37.84 ^b | 37.30 ^b | 33.33 ^c | 6.34 | 33.01 ^c | 32.97 ^c | 41.47 ^b | 23.42 | .0001 | |
| SD | 11.98 | 11.81 | 10.17 | 9.77 | 10.85 | 11.44 | | | | |
| Superior Adjustment | | | | | | | | | | |
| M | 37.20 ^b | 35.76 | 34.09 ^c | 4.07 | 35.08 | 35.01 | 36.60 | 1.77 | .1723 | |
| SD | 8.48 | 9.25 | 6.99 | 8.43 | 8.99 | 7.02 | | | | |

^adf = 2,270
b>c; p<.05, as determined by Student-Newman-Keuls

TABLE 12
Interaction Results of ANOVAs for Offer Subscales

| Measures | 12-14 years old | | | 15-17 years old | | | 18-20 years old | | | F ^a | p |
|----------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|----------------|-------|
| | Low BULIT N=45 | Middle BULIT N=28 | High BULIT N=18 | Low BULIT N=15 | Middle BULIT N=34 | High BULIT N=38 | Low BULIT N=26 | Middle BULIT N=32 | High BULIT N=43 | | |
| Impulse Control | M | 24.67 | 30.77 | 23.32 | 24.74 | 28.09 | 21.17 | 21.42 | 22.60 | 1.95 | .1031 |
| | SD | 6.79 | 6.59 | 6.40 | 7.74 | 5.62 | 6.55 | 7.25 | 5.14 | | |
| Emotional Tone | M | 23.13 | 30.92 | 23.21 | 26.03 | 28.94 | 20.83 | 19.97 | 24.60 | 1.23 | .2968 |
| | SD | 6.46 | 7.79 | 7.16 | 8.62 | 8.56 | 7.02 | 7.13 | 6.60 | | |
| Self and Body Image | M | 26.06 | 30.81 | 23.93 | 23.65 | 32.38 | 22.39 | 22.53 | 28.63 | 0.63 | .6448 |
| | SD | 7.84 | 6.08 | 6.84 | 6.51 | 8.61 | 7.31 | 7.34 | 5.99 | | |
| Social Relationships | M | 19.67 | 23.92 | 20.93 | 22.00 | 24.63 | 21.28 | 20.13 | 23.14 | 0.30 | .8796 |
| | SD | 8.01 | 8.41 | 6.75 | 6.61 | 8.42 | 5.82 | 6.46 | 7.03 | | |
| Morals | M | 23.62 | 24.73 | 23.00 | 22.00 | 23.09 | 19.94 | 20.84 | 20.86 | 0.42 | .7966 |
| | SD | 5.28 | 2.59 | 5.83 | 7.11 | 6.40 | 4.11 | 6.94 | 4.76 | | |
| Educational Goals | M | 20.11 | 19.60 | 22.96 | 18.21 | 20.25 | 17.33 | 17.32 | 19.19 | 0.41 | .8050 |
| | SD | 6.96 | 5.38 | 8.40 | 6.82 | 5.48 | 4.99 | 4.50 | 5.64 | | |
| Sexual Attitudes | M | 28.18 | 26.93 | 25.69 | 24.50 | 25.91 | 23.78 | 24.11 | 25.09 | 0.67 | .6168 |
| | SD | 7.32 | 6.17 | 7.25 | 7.42 | 8.15 | 6.50 | 6.93 | 6.72 | | |
| Family Attitudes | M | 39.49 | 40.93 | 41.00 | 42.26 | 51.03 | 36.17 | 35.50 | 37.95 | 1.12 | .3483 |
| | SD | 13.67 | 10.12 | 16.83 | 14.79 | 16.04 | 13.82 | 11.75 | 12.26 | | |
| Mastery | M | 21.89 | 23.53 | 28.96 | 22.59 | 27.09 | 23.00 | 22.76 | 24.56 | 2.10 | .0817 |
| | SD | 7.46 | 6.81 | 5.85 | 7.67 | 7.88 | 4.78 | 7.07 | 6.52 | | |
| Psychopathology | M | 33.22 | 35.20 | 47.35 | 35.18 | 43.19 | 32.28 | 30.11 | 36.63 | 1.64 | .1651 |
| | SD | 10.70 | 9.18 | 9.88 | 11.41 | 12.21 | 8.44 | 10.30 | 9.90 | | |
| Superior Adjustment | M | 35.84 | 37.67 | 39.27 | 35.38 | 36.69 | 33.06 | 33.63 | 34.93 | 0.14 | .9687 |
| | SD | 9.39 | 7.52 | 6.74 | 10.40 | 7.87 | 5.92 | 8.25 | 6.21 | | |

^adf=4,270

by Student-Newman-Keuls).

There were also significant main effects for BULIT group for Impulse Control [$F(2,270)=12.65, p<.0001$], Emotional Tone [$F(2,270)= 16.76, p<.0001$], Self and Body Image [$F(2,270)= 27.30, p<.0001$], Social Relationships [$F(2,270)=5.15, p<.006$], Educational Goals [$F(2,270)=3.48, p<.03$], Family Attitudes [$F(2,270)=8.13, p<.0004$], Mastery of the External World [$F(2,270)=8.23, p<.0003$], and Psychopathology [$F(2,270)=23.42, p<.0001$].

As compared with subjects at low and intermediate risk for bulimia, high risk subjects reported poorer body image, less satisfactory social relationships, more distress regarding family relationships, a poorer sense of mastery over the world, less affective stability, poorer impulse control, and a greater degree of psychopathology. High risk subjects also had less positive attitudes than low risk subjects regarding future careers and the value of work ($p<.05$, as determined by Student-Newman-Keuls).

There were no significant interaction effects for any of the subscales of the Offer (See Table 12).

The 3 X 3 multivariate analysis of variance for the subscales of the EDI was also found to be significant for age group [$F(16,528)=2.91, p<.0001$], BULIT level [$F(16,528)= 11.04$], and age group by BULIT group interaction [$F(32,975)=$

1.45, $p < .05$] by the Wilks' Lambda Criterion. Table 13 presents the means and results for the main effects, while Table 14 shows the interaction results.

Four of the eight subscales of the EDI showed significant main effects for age group: Ineffectiveness [$F(2,271)=8.53$, $p < .0004$], Interpersonal Distrust [$F(2,271)=6.87$, $p < .001$]; Interoceptive Awareness [$F(2,271)=4.14$, $p < .02$], and Maturity Fears [$F(2,271)=7.23$, $p < .0009$]. This indicates that subjects aged 12-17 were more likely to feel alienated from others and to express more feelings of inefficacy and inadequacy than subjects aged 18-20 ($p < .05$, as determined by Student-Newman-Keuls). Subjects aged 15-17 were more likely to have difficulty identifying internal states than were subjects aged 18-20, and 12-14 year olds experienced a greater number of maturity fears in relation to 18-20 year olds ($p < .05$, as determined by Student-Newman-Keuls).

All eight subscales of the EDI showed significant main effects for BULIT score: Thinness [$F(2,271)=61.44$, $p < .0001$], Bulimia [$F(2,271)=50.48$, $p < .0001$], Body Dissatisfaction [$F(2,271)=45.75$, $p < .0001$], Ineffectiveness [$F(2,271)=21.42$, $p < .0001$], Perfectionism [$F(2,271)=4.65$, $p < .01$], Interpersonal Distrust [$F(2,271)=7.13$, $p < .001$], Interoceptive Awareness [$F(2,271)=21.81$, $p < .0001$], and Maturity Fears [$F(2,271)=3.74$, $p < .02$].

TABLE 13

Means and Results of 3 X 3 Univariate Analyses for
Subscales of the EDI

| Measures | Age Groups | | | | F _a | p | BUILT Groups | | | | F _a | p | |
|-------------------------|---------------------|---------------------|---------------------|-------------|----------------|-------------------|----------------------|--------------------|---------------|-------|----------------|---|--|
| | 12-14 years N=87 | 15-17 years N=94 | 18-19 years N=99 | Low N=91 | | | Middle N=88 | High N=101 | High N=101 | | | | |
| Drive for Thinness | | | | | | | | | | | | | |
| M | 6.39 | 6.84 | 7.47 | 0.39 | .6775 | 3.36 ^c | 6.00 ^{c,d} | 10.94 ^b | 61.44 | .0001 | | | |
| SD | 5.63 | 5.56 | 5.48 | | | 3.45 | 4.58 | 5.44 | | | | | |
| Bulimia | | | | | | | | | | | | | |
| M | 2.53 | 2.43 | 3.48 | 0.66 | .5167 | 0.97 ^c | 1.61 ^c | 5.57 ^b | 50.48 | .0001 | | | |
| SD | 3.86 | 3.06 | 4.43 | | | 1.64 | 1.83 | 4.85 | | | | | |
| Body Dissatisfaction | | | | | | | | | | | | | |
| M | 10.55 | 11.82 | 13.86 | 0.72 | .4870 | 7.31 ^c | 10.81 ^{c,d} | 17.67 ^b | 45.75 | .0001 | | | |
| SD | 8.68 | 8.50 | 7.63 | | | 6.99 | 6.97 | 7.35 | | | | | |
| Ineffectiveness | | | | | | | | | | | | | |
| M | 5.18 ^b | 5.11 ^b | 2.72 ^c | 8.53 | .0003 | 2.85 ^c | 2.99 ^c | 6.71 ^b | 21.42 | .0001 | | | |
| SD | 6.31 | 6.00 | 3.63 | | | 4.23 | 3.83 | 7.02 | | | | | |
| Perfectionism | | | | | | | | | | | | | |
| M | 6.05 | 6.31 | 7.04 | 0.86 | .4255 | 5.35 ^c | 6.43 | 7.55 ^b | 4.65 | .0104 | | | |
| SD | 3.77 | 4.83 | 4.37 | | | 3.87 | 4.13 | 4.65 | | | | | |
| Interpersonal Distrust | | | | | | | | | | | | | |
| M | 3.66 ^b | 4.26 ^b | 2.23 ^c | 6.87 | .0012 | 2.79 ^c | 2.76 ^c | 4.38 ^b | 7.13 | .0010 | | | |
| SD | 3.91 | 4.81 | 3.24 | | | 3.83 | 3.73 | 4.39 | | | | | |
| Interoceptive Awareness | | | | | | | | | | | | | |
| M | 6.62 | 7.15 ^b | 5.77 ^c | 4.14 | .0170 | 5.11 ^c | 5.48 ^c | 8.63 ^b | 21.81 | .0001 | | | |
| SD | 4.82 | 4.95 | 3.71 | | | 3.33 | 3.69 | 5.45 | | | | | |
| Maturity Fears | | | | | | | | | | | | | |
| M | 4.72 ^b | 3.81 | 2.94 ^c | 7.23 | .0009 | 3.42 ^c | 3.32 ^c | 4.52 ^b | 3.74 | .0249 | | | |
| SD | 3.93 | 3.59 | 3.60 | | | 3.44 | 3.11 | 4.40 | | | | | |

^adf = 2,271

^b>c; p<.05, as determined by Student-Newman-Keuls

^d>c; p<.05, as determined by Student-Newman-Keuls

TABLE 14

Interaction Results of 3 X 3 Univariate Analyses for Subscales of the EDI

| Measures | 12-14 years old | | | 15-17 years old | | | 18-20 years old | | | F ^a | p |
|-------------------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|-------------------|----------------------|--------------------|----------------|-------|
| | Low BULIT N=45 | Middle BULIT N=28 | High BULIT N=18 | Low BULIT N=16 | Middle BULIT N=34 | High BULIT N=38 | Low BULIT N=26 | Middle BULIT N=32 | High BULIT N=43 | | |
| Thinness | | | | | | | | | | | |
| M | 3.07 | 6.69 | 11.96 | 3.75 | 6.18 | 10.25 | 3.50 | 5.55 | 10.84 | 0.66 | .6237 |
| SD | 3.11 | 5.18 | 5.15 | 3.90 | 5.11 | 5.61 | 3.65 | 3.73 | 5.54 | | |
| Bulimia | | | | | | | | | | | |
| M | 1.02 | 2.19 | 5.35 | 1.00 | 1.53 | 4.63 | 0.77 | 1.45 | 6.42 | 1.19 | .3148 |
| SD | 1.67 | 2.07 | 5.42 | 1.81 | 2.05 | 3.59 | 1.35 | 1.54 | 5.23 | | |
| Body Dissatisfaction | | | | | | | | | | | |
| M | 6.62 | 10.31 | 17.50 | 7.68 | 10.06 | 17.31 | 8.44 | 11.68 | 18.05 | 0.13 | .9698 |
| SD | 6.76 | 6.41 | 8.53 | 7.78 | 6.84 | 8.14 | 6.44 | 7.32 | 6.10 | | |
| Ineffectiveness | | | | | | | | | | | |
| M | 2.82 | 4.31 | 9.80 | 3.17 | 3.76 | 8.22 | 2.38 | 1.74 | 3.72 | 2.53 | .0409 |
| SD | 4.65 | 4.87 | 7.45 | 4.44 | 3.85 | 7.73 | 2.79 | 2.62 | 4.43 | | |
| Perfectionism | | | | | | | | | | | |
| M | 5.62 | 6.56 | 6.46 | 4.00 | 6.71 | 7.91 | 6.78 | 6.13 | 7.95 | 1.68 | .1554 |
| SD | 3.60 | 4.57 | 3.68 | 3.70 | 4.65 | 5.26 | 4.85 | 3.53 | 4.73 | | |
| Interpersonal Distrust | | | | | | | | | | | |
| M | 3.13 | 2.56 | 5.23 | 3.04 | 4.06 | 5.53 | 1.56 | 1.68 | 3.00 | 0.39 | .8180 |
| SD | 4.19 | 2.92 | 3.51 | 4.00 | 4.82 | 5.10 | 2.12 | 2.47 | 4.03 | | |
| Interceptive Awareness | | | | | | | | | | | |
| M | 4.71 | 5.63 | 10.54 | 6.21 | 6.47 | 8.69 | 4.39 | 4.53 | 7.44 | 1.51 | .2009 |
| SD | 2.63 | 3.36 | 6.24 | 4.36 | 4.53 | 5.67 | 2.77 | 2.81 | 4.13 | | |
| Maturity Fears | | | | | | | | | | | |
| M | 4.07 | 5.50 | 5.38 | 3.14 | 3.65 | 4.56 | 2.22 | 2.11 | 3.98 | 0.54 | .7100 |
| SD | 3.75 | 3.31 | 4.56 | 3.09 | 3.24 | 4.16 | 2.92 | 2.31 | 4.48 | | |

^adf=4,271

Subjects who scored in the high group on the BULIT were more perfectionistic than subjects who scored in the low group. In addition, as compared to those subjects who were at middle and low risk for bulimia, subjects who were at high risk tended more towards bulimic behavior, felt more alienated from others, had more difficulty in identifying internal states, reported feeling less effective in controlling their environment, were more preoccupied with dieting and weight issues and less satisfied with their body shape, and experienced more maturity fears. Also, subjects at intermediate risk for bulimia expressed significantly greater preoccupation with weight and dissatisfaction with their body shape than subjects at low risk. All of the differences between means for the subscales of the EDI are significant at the $p < .05$ level, as determined by Student-Newman-Keuls.

There was a significant interaction between age group and BULIT level for the Ineffectiveness subscale of the EDI [$F(4,271)=2.53, p < .04$]. As can be seen from Figure 2, 18-20 year old subjects who were at high and intermediate risk for bulimia presented as less secure and felt less in control of their lives than did similar aged subjects who were at low risk ($p < .05$, as determined by Student-Newman-Keuls). No other significant interaction effects were observed.

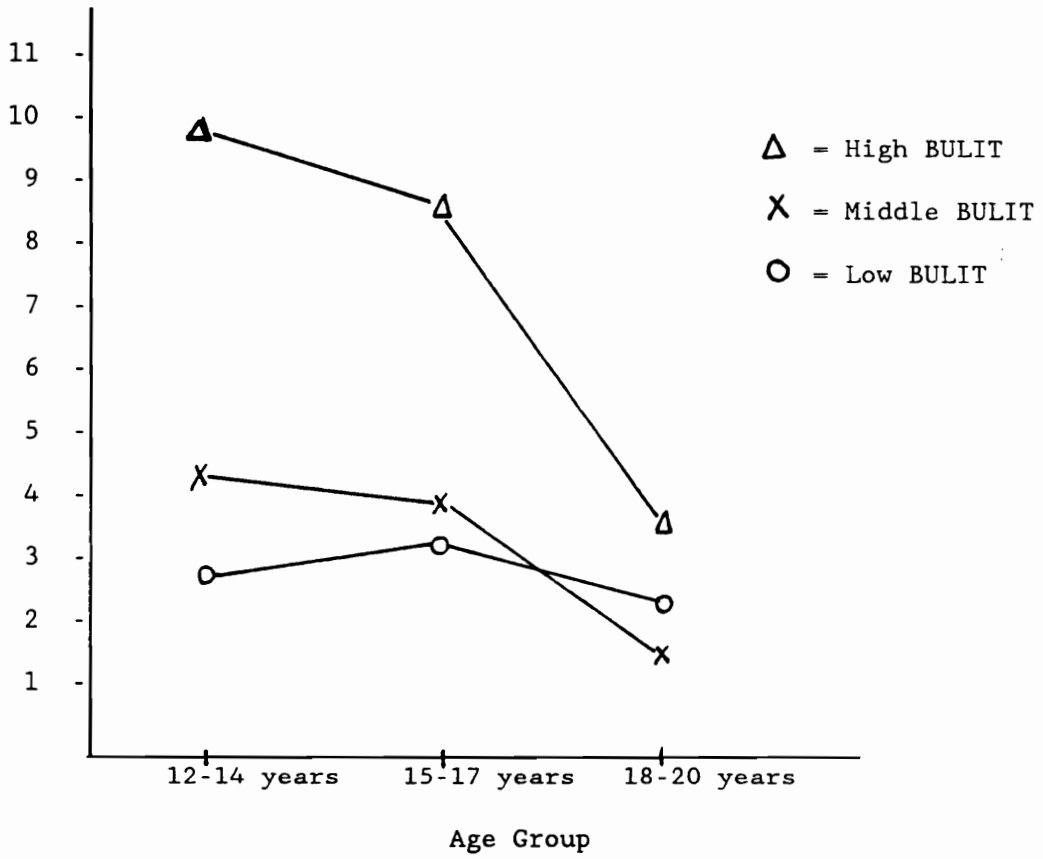


Figure 2

Age Group by BULIT Group Interaction for the Ineffectiveness Subscale of the EDI

Regression Analyses

Four sets of stepwise regression analyses, using the forward selection procedure, were performed in order to determine the best predictors of scores on the BULIT. The sixteen predictor variables (age, body mass index, BDI, Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Emotional Tone, Self and Body Image, Family Attitudes, Mastery of the External World, Psychopathology, and whether the subject was currently dieting) were chosen on the basis of their strong correlation with the BULIT (see Table 15). The regressions were done both across and within age groups.

Across age groups, subjects' scores on the BULIT were best predicted by their scores on Bulimia, Drive for Thinness, BDI, age, and body mass index. No other variables contributed significantly to the prediction of BULIT score. The regression equation was $Y = 14.33 + 2.39 (\text{Bulimia}) + 0.91 (\text{Drive for Thinness}) + 0.88 (\text{age}) + 0.54 (\text{body mass index}) + 0.46 (\text{BDI})$, and the squared multiple correlation was .65. This five variable model was significant [$F(5,259) = 95.04$, $p < .0001$].

Not surprisingly, the Bulimia and Drive for Thinness subscales were highly associated with the BULIT. However,

this relationship may have served to obscure other important predictors of scores on the BULIT. For this reason, a stepwise regression was conducted using all of the above predictor variable with the exception of the Bulimia and Drive for Thinness subscales of the EDI. In this instance, subjects' scores on the BULIT were best predicted by their scores on Body Dissatisfaction, Interoceptive Awareness, whether they currently were dieting, age, and BDI. The regression equation was $Y = 28.68 - 6.06$ (currently dieting) $+ 1.25$ (age) $+ 0.97$ (Interoceptive Awareness) $+ 0.65$ (Body Dissatisfaction) $+ 0.46$ (BDI), and the squared multiple correlation was .44. This five variable equation was also significant [$F(5,259) = 39.98, p < .0001$].

Two sets of stepwise regression analyses (with and without the Bulimia and Thinness subscales) were then conducted within each age group. At 12-14 years of age (with all predictor variables), score on the BULIT was best predicted by Drive for Thinness, Bulimia, and BDI. The regression equation was $Y = 35.88 + 1.74$ (Bulimia) $+ 1.18$ (Drive for Thinness) $+ 0.62$ (BDI), and the squared multiple correlation was .59. This three variable equation was significant [$F(3,76)=37.21, p < .0001$].

At 15-17 years of age (with all predictor variables), score on the BULIT was best predicted by Bulimia, Drive for

Thinness, and BDI. The regression equation was $Y = 39.56 + 2.45$ (Bulimia) $+ 0.79$ (Drive for Thinness) $+ 0.40$ (BDI), and the squared multiple correlation was 0.57. This three variable equation was also significant [$F(3,84)=36.62$, $p<.0001$].

At 18-20 years of age (with all predictor variables), score on the BULIT was best predicted by Bulimia, body mass index, Drive for Thinness, and Self and Body Image. The regression equation was $Y = 18.14 + 2.65$ (Bulimia) $+ 0.85$ (body mass index) $+ 0.79$ (Drive for Thinness) $+ 0.40$ (Self and Body Image), and the squared multiple correlation was 0.72. This four variable equation was significant as well [$F(4,92)=58.88$, $p<.0001$].

With the Bulimia and Drive for Thinness subscales deleted as predictor variables, the best predictors of score on the BULIT for 12-14 year old subjects were Interoceptive Awareness, Body Dissatisfaction, and BDI. The regression equation was $Y = 34.20 + 0.93$ (Interoceptive Awareness) $+ 0.65$ (Body Dissatisfaction) $+ 0.65$ (BDI), and the squared multiple correlation was 0.48. This three variable equation was significant [$F(3,76)=23.71$, $p<.0001$].

At 15-17 years of age (in the absence of the Bulimia and Drive for Thinness subscales), scores on the BULIT were best predicted by Self and Body Image, Body Dissatisfaction, and

BDI. The regression equation was $Y = 31.29 + 0.53$ (Body Dissatisfaction) $+ 0.52$ (Self and Body Image) $+ 0.37$ (BDI), and the squared multiple correlation was 0.40. This three variable equation was significant [$F(3,84)=18.95, p<.0001$].

Finally, at 18-20 years of age (in the absence of the Bulimia and Drive for Thinness subscales), the best predictors of score on the BULIT were Interoceptive Awareness, Body Dissatisfaction, BDI, and whether the subject was currently dieting. The regression equation was $Y = 50.44 + 1.78$ (Interoceptive Awareness) $+ 0.81$ (BDI) $+ 0.60$ (Body Dissatisfaction) $- 7.99$ (currently dieting), and the squared multiple correlation was 0.45. This four variable equation was significant [$F(4,92)=19.05, p<.0001$].

Discriminant Function Analyses

Two separate discriminant function analyses were conducted in order to determine whether variables of interest could be used to accurately classify subjects into the categories of bulimic or nonbulimic. Subjects who scored 88 or above on the BULIT ($n=25$) were designated as bulimic, according to Smith and Thelen's (1984) criteria, and were matched on age, height, and weight with 25 subjects who scored between 45 and 58 on the BULIT (i.e., those subjects referred to as at intermediate risk).

Classification variables for the first discriminant

function analysis were subjects' scores on the Bulimia, Drive for Thinness, and Body Dissatisfaction subscales of the EDI, the Self and Body Image subscale of the Offer, and the BDI. These variables correctly classified 96% of bulimic subjects ($n=24$) and 96% of nonbulimic subjects ($n=24$). A stepwise discriminant function analysis further indicated that the Bulimia and Drive for Thinness subscales of the EDI contributed the most towards accurate classification of subjects [Wilks' Lambda = .30, $F(2,42)=48.69$, $p<.0001$]. The average squared canonical correlation was .70.

Given the strong positive correlation between the Bulimia and Drive for Thinness subscales and the BULIT, the second analysis was conducted without the two EDI subscales in order to assess the classification ability of other variables. Variables used in this analysis were the Body Dissatisfaction, Ineffectiveness, and Interoceptive Awareness subscales of the EDI, the Self and Body Image subscale of the Offer, and the BDI. Using these variables, 92% bulimic subjects ($n=23$) and 96% of nonbulimic subjects ($n=24$) were classified correctly. A stepwise discriminant function analysis indicated that the Body Dissatisfaction subscale of the EDI and the BDI contributed most to the correct classification of subjects [Wilks' Lambda = .46, $F(2,42)=24.34$, $p<.0001$]. The average squared canonical correlation was .54.

Correlational Analyses

Correlation matrices were created for all of the variables both across and within age groups. Because of the large number of comparisons being made, the Bonferroni test of differences was used in order to control the likelihood of significant results being due to chance alone. Correlations were considered significant at the $p < .002$ level. The correlations across age groups are shown in Table 15. There were a number of significant correlations, which is not surprising given the similarity of several of the scales. For example, the Bulimia subscale of the EDI and the BULIT were highly correlated, as were the Body Dissatisfaction subscale of the EDI and the Body- and Self-Image subscale of the Offer. Of special interest given the focus of this study is the correlations of items with the BULIT in that higher scores on the BULIT were related to increased perceptions of ineffectiveness, difficulty recognizing/identifying emotions or visceral sensations (e.g., hunger), poor body image, and higher degrees of depression.

The correlations for all variables within each age group are shown in Tables 16 (ages 12-14), 17 (ages 15-17), and 18 (ages 18-20). The relationships between the variables discussed above also were seen in the within-groups correlations.

TABLE 15

Correlation Matrix of All Variables Across All Subjects

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------------------|-------|------|------|------|-------|------|-------|------|-------|------|------|-------|-------|------|-------|------|-------|------|------|------|----|
| 1. Age | | .30* | -.11 | .17 | .04 | .07 | .12 | -.18 | .13 | -.14 | -.10 | -.24* | -.19 | -.12 | -.07 | .01 | -.14 | -.15 | -.19 | -.17 | |
| 2. Body Mass Index | .08 | | .06 | .25* | .18 | .13 | .43* | -.03 | -.04 | .01 | .04 | -.05 | -.18* | -.10 | .09 | -.05 | -.11 | -.13 | -.09 | -.09 | |
| 3. BDI | -.22* | .46* | .33* | .41* | .70* | .23* | .40* | .54* | .32* | .37* | .53* | .59* | .31* | .16* | .24* | .14 | .49* | | | | |
| 4. Androgyny | -.10 | -.10 | -.07 | -.13 | -.30* | .22* | -.22* | -.17 | -.18* | -.14 | -.15 | -.18* | -.07 | .04 | -.20* | .03 | -.10* | | | | |
| 5. BULIT | .65* | .72* | .53* | .39* | .22* | .21* | .44* | .16 | .12 | .27* | .45* | .16 | .04 | .10 | .02 | .19* | | | | | |
| 6. Thinness | .50* | .61* | .40* | .29* | .21* | .48* | .21* | .12 | .33* | .45 | .09 | .08 | .05 | -.01 | .19 | | | | | | |
| 7. Bulimia | .37* | .33* | .24* | .19 | .46* | .07 | .08 | .22* | .35* | .15 | .07 | .16 | .02 | .18 | | | | | | | |
| 8. Body Dissatisfaction | .38* | .18 | .15 | .31* | .12 | .10 | .30* | .55* | .18 | .07 | .10 | .05 | .22* | | | | | | | | |
| 9. Ineffectiveness | .22* | .57* | .61* | .45* | .35* | .62* | .60* | .40* | .15 | .31* | .15 | .43* | | | | | | | | | |
| 10. Perfectionism | .22* | .29* | .11 | .03 | .21* | .23* | .17 | .06 | -.01 | .13 | .14 | | | | | | | | | | |
| 11. Interpersonal Distrust | .35* | .30* | .07 | .41* | .34* | .43* | .17 | .19 | .27* | | | | | | | | | | | | |
| 12. Interoceptive Awareness | .34* | .30* | .43* | .43* | .22* | .17 | .15 | .11 | .38* | | | | | | | | | | | | |
| 13. Maturity Fears | .16 | .26* | .29* | .18 | .08 | .18 | .20 | .21* | | | | | | | | | | | | | |
| 14. Impulse Control | .66* | .50* | .43* | .49* | .51* | .26* | .50* | | | | | | | | | | | | | | |
| 15. Emotional Tone | .73* | .54* | .45* | .48* | .31* | .56* | | | | | | | | | | | | | | | |
| 16. Self/Body Image | .55* | .37* | .49* | .39* | .51* | | | | | | | | | | | | | | | | |
| 17. Social Relationships | .41 | .48* | .38* | .36* | | | | | | | | | | | | | | | | | |
| 18. Morals | .45* | .20 | .44* | | | | | | | | | | | | | | | | | | |
| 19. Educational Goals | .22* | .47* | | | | | | | | | | | | | | | | | | | |
| 20. Sexual Attitudes | | | | | | | | | | | | | | | | | | | | | |
| 21. Family Attitudes | | | | | | | | | | | | | | | | | | | | | |

* = $p < .002$, as determined by the Bonferroni Test
CONTINUED ON NEXT PAGE

TABLE 15 (continued)
Correlation Matrix for All Variables Across All Subjects

| | 22 | 23 | 24 |
|-------------------------------|-------|-------|------|
| 1. Age | .01 | -.18 | -.07 |
| 2. Body Mass Index | -.07 | -.08 | -.10 |
| 3. BDI | .43* | .60* | .12 |
| 4. Androgyny | -.21* | -.20* | -.16 |
| 5. BULIT | .24* | .35* | .04 |
| 6. Thinness | .17 | .36* | .03 |
| 7. Bulimia | .21* | .32* | .09 |
| 8. Body Dissatisfaction | .25* | .35* | .09 |
| 9. Ineffectiveness | .49* | .63* | .16 |
| 10. Perfectionism | .08 | .26* | -.05 |
| 11. Interpersonal Distrust | .27* | .41* | .19 |
| 12. Interoceptive Awareness | .32* | .52* | .12 |
| 13. Maturity Fears | .24* | .33* | .07 |
| 14. Impulse Control | .55* | .62* | .48* |
| 15. Emotional Tone | .69* | .79* | .50* |
| 16. Body/Self Image | .69* | .78* | .45* |
| 17. Social Relationships | .55* | .58* | .53* |
| 18. Morals | .46* | .46* | .53 |
| 19. Educational Goals | .66* | .48* | .61* |
| 20. Sexual Attitudes | .33* | .41* | .35* |
| 21. Family Attitudes | .55* | .56* | .43* |
| 22. Mastery of External World | | .71* | .63* |
| 23. Psychopathology | | | .49* |
| 24. Superior Adjustment | | | |

* = $p < .002$, as determined by the Bonferroni Test

TABLE 16

Correlation Matrix of All Variables for Ages 12-14

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------------------|-------|------|------|------|-------|------|-------|-------|------|------|-------|------|------|------|------|------|------|------|------|-----|----|
| 1. Age | .30 | .13 | .02 | .18 | .30 | .17 | .26 | .15 | .13 | -.02 | .17 | -.01 | .10 | .22 | .21 | .22 | .11 | -.01 | -.12 | .17 | |
| 2. Body Mass Index | .16 | .03 | .19 | .23 | .10 | .38* | .06 | .16 | .04 | .17 | .09 | -.07 | .05 | .10 | -.11 | .03 | -.09 | -.03 | .06 | | |
| 3. BDI | -.41* | .65* | .59* | .48* | .60* | .70* | .21 | .35 | .50* | .25 | .31 | .48* | .60* | .23 | .03 | .30 | .01 | .44* | | | |
| 4. Androgyny | -.34* | -.19 | -.29 | -.23 | -.53* | .13 | -.43* | -.35* | -.20 | -.25 | -.40* | -.25 | -.22 | .21 | -.30 | .22 | -.18 | | | | |
| 5. BULIT | .70* | .60* | .61* | .56* | .10 | .20 | .53* | .23 | .27 | .40* | .45* | .10 | .16 | .26 | -.10 | .36* | | | | | |
| 6. Drive for Thinness | .46* | .72* | .53* | .26 | .19 | .52* | .34 | .17 | .44* | .54* | .06 | .15 | .14 | -.01 | .37* | | | | | | |
| 7. Bulimia | .40* | .43* | .12 | .21 | .48* | .07 | .15 | .27 | .25 | .10 | .05 | .39* | -.22 | .38* | | | | | | | |
| 8. Body Dissatisfaction | .53* | .13 | .14 | .45* | .26 | .23 | .46* | .65* | .12 | .16 | .26 | -.10 | .47* | | | | | | | | |
| 9. Ineffectiveness | .33 | .58* | .61* | .41* | .34 | .61* | .60* | .32 | -.01 | .34 | -.05 | .49* | | | | | | | | | |
| 10. Perfectionism | .23 | .33 | .19 | -.10 | .15 | .27 | .08 | .14 | -.03 | .22 | .03 | | | | | | | | | | |
| 11. Interpersonal Distrust | .30 | .24 | .02 | .41* | .26 | .28 | .02 | .14 | .02 | .32 | | | | | | | | | | | |
| 12. Interoceptive Awareness | .38* | .19 | .35 | .33 | .09 | -.01 | .06 | -.18 | .34 | | | | | | | | | | | | |
| 13. Maturity Fears | -.04 | .17 | .25 | .01 | -.13 | .03 | .08 | .16 | | | | | | | | | | | | | |
| 14. Impulse Control | .63* | .49* | .42* | .41* | .52* | -.04 | .52* | | | | | | | | | | | | | | |
| 15. Emotional Tone | .74* | .50* | .40* | .53* | .07 | .70* | | | | | | | | | | | | | | | |
| 16. Self and Body Image | .46* | .30 | .53* | .24 | .64* | | | | | | | | | | | | | | | | |
| 17. Social Relationships | .29 | .55* | .22 | .40* | | | | | | | | | | | | | | | | | |
| 18. Morals | .37* | .10 | .44* | | | | | | | | | | | | | | | | | | |
| 19. Educational Goals | -.01 | .57* | | | | | | | | | | | | | | | | | | | |
| 20. Sexual Attitudes | | | | | | | | | | | | | | | | | | | | | |
| 21. Family Attitudes | | | | | | | | | | | | | | | | | | | | | |

* = p<.002, as determined by the Bonferroni Test

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TABLE 16
Correlation Matrix of All Variables for Ages 12-14 (cont.)

| | 22 | 23 | 24 |
|--------------------------------|------|-------|------|
| 1. Age | .14 | .24 | .10 |
| 2. Body Mass Index | .08 | .14 | -.15 |
| 3. BDI | .47* | .62* | .02 |
| 4. Androgyny | -.31 | -.33* | -.13 |
| 5. BULIT | .44* | .52* | .04 |
| 6. Drive for Thinness | .39* | .53* | .02 |
| 7. Bulimia | .35 | .32 | .13 |
| 8. Body Dis- satisfaction | .48* | .58* | .13 |
| 9. Ineffectiveness | .55* | .67* | .10 |
| 10. Perfectionism | .15 | .27 | -.06 |
| 11. Interpersonal Distrust | .28 | .36 | .11 |
| 12. Interoceptive Awareness | .31 | .48* | -.01 |
| 13. Maturity Fears | .17 | .20 | -.13 |
| 14. Impulse Control | .57* | .58* | .49* |
| 15. Emotional Tone | .73* | .79* | .54* |
| 16. Body and Self Image | .75* | .81* | .44* |
| 17. Social Relationships | .57* | .57* | .57* |
| 18. Morals | .40* | .39* | .56* |
| 19. Educational Goals | .72* | .53* | .67* |
| 20. Sexual Attitudes | .09 | .09 | .20 |
| 21. Family Attitudes | .65* | .62* | .52* |
| 22. Mastery | | .74* | .55* |
| 23. Psychopathology | | | .48* |

* = $p < .002$, as determined by the Bonferroni Test

24. Superior Adjustment

TABLE 17

Correlation Matrix of All Variables for Ages 15-17

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1. Age | .10 | .01 | -.04 | -.04 | .07 | -.03 | .02 | .16 | -.04 | -.04 | .13 | .08 | .01 | -.09 | -.01 | .02 | .05 | -.04 | .01 | .05 | -.10 |
| 2. Body Mass Index | .03 | -.02 | .03 | -.02 | .20* | .16 | .08 | .37* | .01 | -.21 | .07 | -.07 | -.03 | -.14 | -.20 | .05 | -.16 | -.09 | -.07 | -.20 | -.08 |
| 3. BDI | -.07 | .46* | .49* | .28 | .37* | .28 | .37* | .75* | .34 | .41* | .56* | .33 | .47* | .61* | .65* | .33 | .18 | .21 | .15 | .15 | .60* |
| 4. Androgyny | .03 | -.10 | -.03 | -.15 | -.08 | .28 | -.09 | -.05 | -.01 | .02 | .08 | -.01 | .02 | .08 | -.13 | .06 | .03 | -.05 | -.01 | -.01 | .03 |
| 5. BULIT | .54* | .64* | .51* | .47* | .32* | .31 | .34* | .14 | .31 | .31* | .31* | .14 | .31 | .31* | .55* | .30 | .05 | .05 | .11 | .11 | .36* |
| 6. Drive for Thinness | .36 | .57* | .44* | .39* | .32 | .39* | .32 | .39* | .15 | .18 | .34 | .45* | .16 | .08 | .01 | -.04 | .24 | | | | |
| 7. Bulimia | .38* | .44* | .27 | .33 | .44* | .08 | .28 | .35 | .53* | .32 | .19 | .16 | .17 | .24 | | | | | | | |
| 8. Body Dissatisfaction | .45* | .28 | .30 | .19 | .05 | .09 | .30 | .51* | .26 | .07 | .02 | .03 | .13 | | | | | | | | |
| 9. Ineffectiveness | .33 | .60* | .65* | .41* | .41* | .65* | .69* | .44* | .23 | .27 | .20 | .52* | | | | | | | | | |
| 10. Perfectionism | .32 | .31 | .15 | .19 | .38* | .31 | .30 | .03 | -.01 | .21 | .22 | | | | | | | | | | |
| 11. Interpersonal Distrust | .46* | .39* | .16 | .39* | .44* | .55* | .24 | .17 | .26 | .29 | | | | | | | | | | | |
| 12. Interoceptive Awareness | .31 | .40* | .53* | .50* | .28 | .24 | .23 | .46* | | | | | | | | | | | | | |
| 13. Maturity Fears | .24 | .20 | .23 | .20 | .14 | .15 | .18 | .27 | | | | | | | | | | | | | |
| 14. Impulse Control | .66* | .53* | .45* | .46* | .54* | .38* | .46* | | | | | | | | | | | | | | |
| 15. Emotional Tone | .74* | .53* | .43* | .45* | .37* | .50* | | | | | | | | | | | | | | | |
| 16. Self and Body Image | .57* | .45* | .50* | .38* | .52* | | | | | | | | | | | | | | | | |
| 17. Social Relationships | .51* | .54* | .47* | .36* | | | | | | | | | | | | | | | | | |
| 18. Morals | .57* | .15 | .42* | | | | | | | | | | | | | | | | | | |
| 19. Educational Goals | .34 | .39* | | | | | | | | | | | | | | | | | | | |
| 20. Sexual Attitudes | | | | | | | | | | | | | | | | | | | | | .12 |
| 21. Family Attitudes | | | | | | | | | | | | | | | | | | | | | |

* = p<.002, as determined by the Bonferroni Test

TABLE 17
Correlation Matrix of All Variables for Ages 15-17 (cont.)

| | | | | |
|-----------------------------|------|------|------|--|
| 1. Age | | | | |
| 2. Body Mass Index | .22 | .23 | .24 | |
| 3. BDI | .14 | .06 | .15 | |
| 4. Androgyny | -.14 | -.17 | -.07 | |
| 5. BULIT | .43* | .64* | .13 | |
| 6. Drive for Thinness | -.02 | -.03 | -.17 | |
| 7. Bulimia | .23 | .41* | .08 | |
| 8. Body Dissatisfaction | .11 | .35 | .02 | |
| 9. Ineffectiveness | .32 | .45* | .17 | |
| 10. Perfectionism | .15 | .29 | -.02 | |
| 11. Interpersonal Distrust | .52* | .67* | .16 | |
| 12. Interoceptive Awareness | .12 | .44* | -.06 | |
| 13. Maturity Fears | .32 | .51* | .20 | |
| 14. Impulse Control | .40* | .59* | .19 | |
| 15. Emotional Tone | .17 | .29 | .13 | |
| 16. Body and Self Image | .57* | .62* | -.53 | |
| 17. Social Relationships | .73* | .82* | .49* | |
| 18. Morals | .72* | .78* | .40* | |
| 19. Educational Goals | .58* | .59* | .52* | |
| 20. Sexual Attitudes | .52* | .45* | .52* | |
| 21. Family Attitudes | .66* | .42* | .61* | |
| 22. Mastery | .39* | .50* | .36* | |
| 23. Psychopathology | .55* | .55* | .36 | |
| 24. Superior Adjustment | .71* | .68* | .45* | |

* = $p < .002$, as determined by the Bonferroni Test

TABLE 18

Correlation Matrix of All Variables for Ages 18-20

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1. Age | | .09 | -.13 | .23 | -.03 | -.18 | -.10 | -.14 | -.14 | .07 | -.15 | -.14 | -.14 | -.02 | -.08 | -.18 | -.05 | -.03 | -.14 | -.11 | -.13 |
| 2. Body Mass Index | .15 | | .06 | .25 | .11 | .14 | .48* | -.01 | -.06 | .03 | .15 | -.01 | -.22 | -.03 | .19 | .13 | .13 | -.13 | -.14 | .15 | -.11 |
| 3. BDI | -.14 | .45* | .31 | .41* | .32 | .53* | .30 | .41* | .44* | .36* | .18 | .39* | .51* | .40* | .21 | .33 | .32 | .30 | | | |
| 4. Androgyny | -.05 | -.02 | .04 | -.11 | -.16 | .20 | -.10 | -.02 | -.24 | -.09 | -.05 | -.17 | -.05 | .01 | -.16 | -.08 | -.07 | | | | |
| 5. BULIT | .65* | .78* | .45* | .35* | .23 | .28 | .51* | .24 | -.05 | .26 | .46* | .16 | .02 | .16 | .14 | .08 | | | | | |
| 6. Drive for Thinness | .59* | .49* | .25 | .25 | .18 | .52* | .16 | .07 | .29 | .36* | .03 | .02 | .11 | .03 | .04 | | | | | | |
| 7. Bulimia | .35 | .35 | .35 | .20 | .59* | .15 | -.10 | .19 | .36* | .13 | .04 | .06 | .15 | .06 | | | | | | | |
| 8. Body Dissatisfaction | .19 | .13 | .15 | .28 | .08 | .01 | .22 | .53* | .18 | .03 | .16 | .19 | .14 | | | | | | | | |
| 9. Ineffectiveness | .21 | .52* | .51* | .44* | .19 | .54* | .52* | .44* | .11 | .29 | .31 | .13 | | | | | | | | | |
| 10. Perfectionism | .19 | .37* | .14 | .14 | .24 | .23 | .19 | .21 | .20 | .09 | .34 | | | | | | | | | | |
| 11. Interpersonal Distrust | .26 | .22 | .01 | .39* | .29 | .47* | .19 | .19 | .27 | .18 | | | | | | | | | | | |
| 12. Interoceptive Awareness | .27 | .18 | .35* | .47* | .23 | .03 | .13 | .30 | .19 | | | | | | | | | | | | |
| 13. Maturity Fears | .14 | .29 | .32 | .29 | .09 | .28 | .25 | .06 | | | | | | | | | | | | | |
| 14. Impulse Control | .59* | .44* | .38* | .47* | .38* | .41* | .35 | | | | | | | | | | | | | | |
| 15. Emotional Tone | .71* | .60* | .45* | .47* | .49* | .40* | | | | | | | | | | | | | | | |
| 16. Self and Body Image | .62* | .32 | .47* | .57* | .33 | | | | | | | | | | | | | | | | |
| 17. Social Relationships | .42* | .39* | .52* | .27 | | | | | | | | | | | | | | | | | |
| 18. Morals | .38* | .32 | .34 | | | | | | | | | | | | | | | | | | |
| 19. Educational Goals | .25 | .44* | | | | | | | | | | | | | | | | | | | |
| 20. Sexual Attitudes | | | | | | | | | | | | | | | | | | | | | |
| 21. Family Attitudes | | | | | | | | | | | | | | | | | | | | | .18 |

* = p<.002, as determined by the Bonferroni Test

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TABLE 18
Correlation Matrix of All Variables for Ages 18-20 (cont.)

| | 22 | 23 | 24 |
|-----------------------------|-------|------|------|
| 1. Age | -.32 | -.20 | -.16 |
| 2. Body Mass Index | -.10 | -.05 | .02 |
| 3. BDI | .48* | .53* | .33 |
| 4. Androgyny | -.32* | -.19 | -.11 |
| 5. BULIT | .12 | .30 | .06 |
| 6. Drive for Thinness | .07 | .25 | .07 |
| 7. Bulimia | .03 | .29 | .03 |
| 8. Body Dissatisfaction | .13 | .24 | .22 |
| 9. Ineffectiveness | .46* | .53* | .19 |
| 10. Perfectionism | .11 | .26 | .10 |
| 11. Interpersonal Distrust | .38* | .40* | .25 |
| 12. Interoceptive Awareness | .23 | .48* | .20 |
| 13. Maturity Fears | .43* | .38* | .15 |
| 14. Impulse Control | .47* | .54* | .39* |
| 15. Emotional Tone | .62* | .76* | .46* |
| 16. Body and Self Image | .59* | .74* | .51* |
| 17. Social Relationships | .53* | .63* | .50* |
| 18. Morals | .43* | .45* | .52* |
| 19. Educational Goals | .63* | .51* | .53* |
| 20. Sexual Attitudes | .60* | .62* | .51* |
| 21. Family Attitudes | .36* | .41* | .39* |
| 22. Mastery | .71* | .64* | |
| 23. Psychopathology | | | .51* |
| 24. Superior Adjustment | | | |

* = p < .002, as determined by the Bonferroni Test

Fisher's Z Test was used to determine if there were significant differences between the age groups on score - BULIT correlations. Out of the fourteen significant correlations with the BULIT, six were significantly different between age groups. The correlation coefficient between the Bulimia subscale of the EDI and the BULIT was significantly larger for subjects aged 18-20 than it was for subjects aged 12-17 ($X^2 = 7.39$). Perceptions of family relationships and level of psychopathology were significantly correlated with the BULIT only for subjects aged 12-17 ($X^2 = .38$ and $X^2 = .78$, respectively). Level of emotional stability, feelings of mastery over one's environment, and level of androgyny were significantly correlated with the BULIT for 12-14 year old subjects only.

Exploratory Data Analyses

The differences between bulimic and nonbulimic groups on the BDI, androgyny scale, subscales of the Offer, and subscales of the EDI were assessed through a series of ANOVAs/MANOVAs. Because of the limited number of subjects meeting the criteria for bulimia, only one-way ANOVAs/MANOVAs were performed. Three percent of the subjects ($n=10$) were classified as bulimic according to strict DSM-III criteria, with a BULIT score above 101 (age range = 12-19; $M = 16.62$). Eight percent ($n=25$) were classified as bulimic if the more

liberal cut-off score of 88 was used (age range = 12-20; $M = 17.09$). Subjects for all analyses were those who scored above 88 on the BULIT (i.e., probably bulimic; $n=25$) plus an equivalent number of subjects from the intermediate risk group (i.e., nonbulimic) who were matched on age, height, and weight.

Subject Characteristics

Table 19 presents the means and standard deviations for age, height, weight, body mass index, ideal weight, and number of minutes spent exercising per week for bulimic and nonbulimic subjects. For bulimic subjects, 20% ($n=5$) participated in 4 or more extra-curricular activities, 56% ($n=14$) were currently dieting, and 44% ($n=11$) reported that at least one person in their immediate family was dieting. For nonbulimic subjects, 12% ($n=3$) participated in 4 or more extracurricular activities, 32% ($n=8$) were currently dieting, and 40% ($n=10$) indicated that at least one person in their immediate family was dieting.

One-Way ANOVAs/MANOVAs

There were significant differences between bulimic and nonbulimic subjects on degree of depression, as measured by the BDI [$F(1,43)=17.91$, $p<.0001$]. (See Table 20). Bulimic subjects were significantly more depressed than nonbulimic subjects ($p<.05$, as determined by Student-Newman-Keuls). In

TABLE 19

Subject Characteristics of
Bulimic and Nonbulimic Subjects

| <u>Outcome Measure</u> | <u>Bulimic (N=25)</u> | <u>Nonbulimic (N=25)</u> |
|------------------------|-----------------------|--------------------------|
| Age | | |
| <u>M</u> | 17.09 | 17.17 |
| <u>SD</u> | 2.52 | 2.62 |
| Height | | |
| <u>M</u> | 64.05 | 64.45 |
| <u>SD</u> | 2.79 | 2.22 |
| Body Mass Index | | |
| <u>M</u> | 21.99 | 21.28 |
| <u>SD</u> | 2.50 | 1.54 |
| Weight | | |
| <u>M</u> | 128.00 | 125.43 |
| <u>SD</u> | 15.99 | 12.99 |
| Ideal Weight | | |
| <u>M</u> | 114.95 | 116.41 |
| <u>SD</u> | 12.58 | 12.69 |
| Exercise | | |
| <u>M</u> | 124.09 | 224.32 |
| <u>SD</u> | 102.29 | 288.89 |

TABLE 20
Means and Results of One-Way ANOVA for
Beck Depression Inventory

| <u>Outcome Measure</u> | <u>Bulimic (N=25)</u> | <u>Nonbulimic (N=25)</u> | <u>F^a</u> |
|------------------------|-----------------------|--------------------------|----------------------|
| BDI | | | |
| <u>M</u> | 18.36 ^b | 7.44 ^c | 17.91 [*] |
| <u>SD</u> | 10.03 | 7.11 | |

^adf=1,43

^{*}p<.0001

b>c; p<.05, as determined by Student-Newman-Keuls

fact, bulimic subjects overall scored in the moderate range of depression, with 25% (n=6) of bulimic subjects scoring in the severe depression range. Nonbulimic subjects scored in the not depressed range.

The one-way MANOVA assessing differences between groups on the subscales of the Offer was significant [$F(11,33)=8.54$, $p<.0001$], as determined by the Wilks' Lambda Criterion. Means and results of the univariate analyses are shown in Table 21.

There were significant differences between bulimic and nonbulimic subjects on the following subscales of the Offer: Emotional Tone [$F(1,43)=8.88$, $p<.005$], Self and Body Image [$F(1,43)=28.56$, $p<.0001$], Social Relationships [$F(1,43)=4.20$, $p<.05$], Family Attitudes [$F(1,43)=6.03$, $p<.02$], and Psychopathology [$F(1,43)=10.93$, $p<.002$]. Specifically, bulimic subjects were less affectively stable, had a poorer self-image, reported more distressed peer and familial relationships, and showed more signs of psychopathology than did nonbulimic subjects ($p<.05$, as determined by Student-Newman-Keuls).

The MANOVA assessing the differences between bulimics and nonbulimics on the subscales of the EDI was significant [$F(8,36)=16.61$, $p<.0001$], as determined by the Wilks' Lambda Criterion. Means and results of the univariate analyses are shown in Table 22.

TABLE 21

Means and Results of One-Way ANOVAs for Offer Subscales

| Outcome Measure | Bulimic (N=25) | Nonbulimic (N=25) | F ^a | p |
|----------------------|--------------------|--------------------|----------------|-------|
| Impulse Control | | | | |
| M | 24.36 | 22.65 | 0.59 | .4447 |
| SD | 7.64 | 7.24 | | |
| Emotional Tone | | | | |
| M | 29.77 ^b | 21.96 ^c | 8.88 | .0047 |
| SD | 8.83 | 8.77 | | |
| Self/Body Image | | | | |
| M | 33.77 ^b | 23.74 ^c | 28.56 | .0001 |
| SD | 7.25 | 5.22 | | |
| Social Relationships | | | | |
| M | 26.91 ^b | 21.65 ^c | 4.20 | .0467 |
| SD | 9.50 | 7.66 | | |
| Morals | | | | |
| M | 23.30 | 21.82 | 0.89 | .3516 |
| SD | 5.29 | 5.30 | | |
| Educational Goals | | | | |
| M | 20.09 | 18.87 | 0.43 | .5144 |
| SD | 5.59 | 6.78 | | |
| Sexual Attitudes | | | | |
| M | 27.91 | 26.04 | 0.72 | .4012 |
| SD | 9.20 | 5.06 | | |
| Family Attitudes | | | | |
| M | 47.64 ^b | 38.09 ^b | 6.03 | .0182 |
| SD | 15.40 | 10.29 | | |
| Mastery of the World | | | | |
| M | 28.09 | 24.78 | 1.92 | .1733 |
| SD | 9.58 | 6.15 | | |
| Psychopathology | | | | |
| M | 44.27 ^b | 33.26 ^c | 10.93 | .0019 |
| SD | 12.41 | 9.85 | | |
| Superior Adjustment | | | | |
| M | 38.35 | 36.23 | 0.70 | .4081 |
| SD | 6.39 | 10.13 | | |

^adf=1,43 b>c; p<.05, as determined by Student-Newman-Keuls

TABLE 22
Means and Results of ANOVAs for
Subscales of the EDI

| <u>Outcome Measures</u> | <u>Bulimic (N=25)</u> | <u>Nonbulimic (N=25)</u> | <u>F^a</u> | <u>p</u> |
|-------------------------|-----------------------|--------------------------|----------------------|----------|
| Drive for Thinness | | | | |
| <u>M</u> | 14.27 ^b | 5.30 ^c | 56.92 | .0001 |
| <u>SD</u> | 4.12 | 3.85 | | |
| Bulimia | | | | |
| <u>M</u> | 10.32 ^b | 1.48 ^c | 66.46 | .0001 |
| <u>SD</u> | 4.92 | 1.65 | | |
| Body Dissatisfaction | | | | |
| <u>M</u> | 21.68 ^b | 11.70 ^c | 38.96 | .0001 |
| <u>SD</u> | 4.84 | 5.82 | | |
| Ineffectiveness | | | | |
| <u>M</u> | 9.59 ^b | 2.61 ^c | 13.96 | .0005 |
| <u>SD</u> | 7.95 | 4.05 | | |
| Perfectionism | | | | |
| <u>M</u> | 10.14 ^b | 6.52 ^c | 7.83 | .0076 |
| <u>SD</u> | 4.65 | 4.00 | | |
| Interpersonal Distrust | | | | |
| <u>M</u> | 6.00 | 3.30 | 3.66 | .0623 |
| <u>SD</u> | 5.00 | 4.45 | | |
| Interceptive Awareness | | | | |
| <u>M</u> | 11.27 ^b | 5.04 ^c | 17.71 | .0001 |
| <u>SD</u> | 5.74 | 4.08 | | |
| Maturity Fears | | | | |
| <u>M</u> | 4.46 | 3.44 | 0.70 | .4077 |
| <u>SD</u> | 4.90 | 3.13 | | |

^adf=1,43

^b>^c; p<.05, as determined by Student-Newman-Keuls

On the subscales of the EDI, there were significant differences between the two groups on Drive for Thinness [$F(1,43)=56.92, p<.0001$], Bulimia [$F(1,43)=66.46, p<.0001$], Body Dissatisfaction [$F(1,43)=38.96, p<.0001$], Ineffectiveness [$F(1,43)=13.96, p<.0006$], Perfectionism [$F(1,43)=7.83, p<.008$], and Interoceptive Awareness [$F(1,43)=17.71, p<.0001$]. Bulimic subjects were more preoccupied with dieting and weight, tended more towards episodes of bulimic behavior, were more dissatisfied with their body shape, felt more inadequate and less able to control their own lives, were more perfectionistic, and less able to recognize and identify internal states than nonbulimics ($p<.05$, as determined by Student-Newman-Keuls).

A one-way ANOVA assessing the relationship between level of androgyny and bulimic behavior also was conducted. No significant main effects were found.

Discussion

The main purpose of this study was to assess the possibility that difficulty in coping with developmental stressors has an impact upon the occurrence of bulimia and bulimic-like behaviors in early and late adolescent females. Additional hypotheses assessed the differential effect of age level on the type of concerns experienced by subjects with and without eating problems.

It should be kept in mind that, while the majority of subscales possessed sufficient reliability for interpretation, there were several subscales that should be interpreted with caution. Specifically, for individuals aged 12-14, the Morals and Educational Goals subscales of the Offer and the Perfectionism subscale of the EDI showed relatively poor internal consistency. For individuals aged 15-17 and 18-20, the Interoceptive Awareness subscale of the EDI also demonstrated relatively poor internal consistency. Finally, at all ages, the Impulse Control subscale of the Offer should be interpreted with caution.

Preliminary analyses indicated significant differences between subjects at the three BULIT levels on age only, and these differences should be kept in mind when interpreting the results of the statistical analyses. Subjects at low risk for bulimia tended to be younger than subjects at high and

intermediate risk, suggesting that these younger individuals may not have had the time to develop more serious eating problems. As they grow older, these problems may become more intense and more firmly entrenched.

The hypothesis that subjects at high risk for bulimia across age levels would differ from low risk subjects on a variety of intrapersonal, interpersonal and developmental variables was generally supported. Subjects who scored in the high range on the BULIT were significantly more troubled in the areas of interest than those subjects who scored in the low or, in some cases, the middle ranges. The hypothesis that there would be significant differences between the concerns of high risk subjects at different developmental levels was supported in a limited number of cases. Discussion of these hypotheses will be divided into the areas of intrapersonal/intrapsychic and developmental variables.

The factors that address intrapersonal/intrapsychic concerns are depression, self-efficacy, perfectionism, and androgyny. Subjects at high risk for bulimia were significantly more depressed than subjects at intermediate or low risk. In fact, 26% of the bulimics (i.e., those subjects who scored 88 and above on the BULIT) were severely depressed. BDI scores also were one of the strongest predictors of BULIT score, and served as an effective variable to classify

subjects into bulimic or nonbulimic categories. This supports the work of other researchers who have found that both adult and high-school aged bulimic subjects report a higher degree of depression than do nonbulimic subjects (e.g., Crowther & Chernyk, 1986; Johnson & Maddi, 1986; Post & Crowther, 1985).

In addition to bulimic behavior being linked with depression, so-called "normal" dieting itself recently has been linked to a higher level of depression than that found in non-dieters (Rosen, Gross, & Vara, 1987). As it has been reported that the onset of bulimia frequently follows an extended period of severe dieting (Gandau, 1984; Johnson, 1982; Wooley & Wooley, 1985), it is possible that repeated dieting constitutes a risk factor for bulimia. In fact, in the present sample, 61% of the bulimic subjects reported dieting to lose weight, even though only 24% of the bulimics could be considered overweight. While this cannot be taken as an indication of causality, the high number of adolescents who engage in dieting regardless of weight (e.g., Desmond, Price, Gray, & O'Connell, 1986; Greenfeld et al., 1987) suggests an association between depression, dieting, and bulimia that is truly concerning.

In an extension of research that primarily has dealt with the bulimia-depression relationship across age groups, the current study also examined the impact of level of bulimic

behavior on depression at different developmental levels. High scorers on the BULIT between the age of 12-17 exhibited significantly greater depression (within the moderate depression range, as described by Beck, 1978) than did low and middle scorers of the same age (within the non-depressed range). High scorers on the BULIT who were 18-20 years old appeared to be experiencing approximately the same degree of depression as low and moderate scorers of the same ages. The implication of this differential is that bulimia may have much more serious consequences, at least in the area of depression, in younger subjects. While bulimia is of concern at all ages, it may be that the younger the bulimic, the more severe the psychological consequences. Or, conversely, the case may be made that the more distressed the young adolescent, the more likely they are to resort to maladaptive eating patterns. Certainly, causality cannot be determined at this point. However, it is interesting to speculate that this developmental difference in level of depression may provide partial support for the hypothesis that difficulty in coping with the tasks of adolescence plays a role in the etiology of bulimia.

Negative feelings regarding one's self-efficacy also were highly associated with bulimia and bulimia-like behavior in the current sample. Subjects across age groups who scored

highly on the Ineffectiveness subscale of the EDI, which measures feelings of inadequacy, worthlessness, and lack of control over one's life, also scored highly on the BULIT, supporting the work of other researchers who also have found a similar relationship (e.g., Rosen et al., 1987). In addition, there was an interaction of age level and BULIT level on the Ineffectiveness subscale. Older subjects (ages 18-20) who demonstrated a high degree of bulimic behavior reported more feelings of inadequacy, insecurity, and perceptions of being unable to control their environment than younger high risk subjects. One possible explanation for the higher incidence of feelings of inadequacy in late adolescent, high risk females is that these young women may have been struggling with weight and appearance issues for years. There is also some speculation, discussed in greater detail below, that older bulimic women may continue to experience difficulty in dealing with earlier developmental tasks. Their perceptions of themselves as failures in these areas may account for this increased sense of ineffectiveness and inadequacy. Again, it is possible that difficulty in dealing with age-appropriate tasks contributes to the development of bulimia.

Bulimia has been related to perfectionistic tendencies by a number of researchers (e.g., Goodsitt, 1984; Katzman &

Wolchik, 1984). The current sample showed a similar pattern. Subjects who scored high on the BULIT were significantly more perfectionistic than were subjects who scored in the low group, and BULIT score was positively correlated with perfectionism for 15-17 year olds. The continued striving for perfectionism that is frequently seen in bulimics is intertwined with several other characteristics. Bulimics' profound fear of becoming fat and their extreme sensitivity to weight gain is often associated with perfectionistic tendencies and a reliance on external criteria to determine self-worth (Fairburn, 1985). Given that the societal expectations are for unrealistic thinness, women who strive to achieve this ideal are predisposing themselves to failure, which then leads to feelings of hopelessness and depression.

Speculation as to the role of sex-role orientation and degree of androgyny in the development of bulimia has begun to be addressed in recent years. In the current study, the hypothesis that subjects at high risk for bulimia would be less androgynous than low risk subjects was supported. In addition, younger subjects (ages 12-14) were less androgynous than older subjects (ages 18-20). While an interaction between age and risk level for bulimia was not found in this area, there was a significant negative correlation between level of androgyny and BULIT score for 12-14 year old subjects

only. This indicates that, for younger subjects, higher scores on the BULIT tended to be associated with lower levels of androgyny.

As adolescence is a time of psychological change, it may be that younger individuals have not yet had the time needed to consolidate a well-defined sense of self. Women who hold more sex-typed and less androgynous attitudes may be more likely to accept the stereotypical societal viewpoint that women should diet and that thinness and feelings of self-worth are equivalent. Leon and Finn (1984) suggest that women who are less androgynous may be less likely to utilize appropriate assertive behaviors in problematic situations, which could potentially lead to the abuse of food as a mechanism for dealing with emotional arousal. Similarly, Holleran, Pascale, and Fraley (1988) reported that low assertiveness, high femininity, and low androgyny were high predictors of bulimia. Also, the extreme shame and disgust following a binge episode that many bulimics experience may be due in part to the societal view of bingeing as unfeminine (Leon & Finn, 1984).

An alternative view of androgyny and bulimia is discussed by Lewis and Johnson (1989). Individuals who exhibit a low level of androgyny may be conceptualized as endorsing neither masculine- nor feminine-typed sex-role characteristics. Lewis and Johnson suggest that these individuals lack a solid sense

of self and may be predisposed to unquestioningly accepting the prevailing societal or cultural norms in an attempt to delineate a self-structure. In this manner, young women who are characterized by a low degree of androgyny may try to accomplish a sense of identity by valuing and striving for thinness. It seems, therefore, that level of androgyny and acceptance of sex-role stereotypes may contribute in numerous direct and indirect ways to the development of eating problems.

In summary, subjects at high risk for bulimia were significantly more disturbed on a number of intrapersonal variables than were low risk subjects. There also were developmental differences in terms of level of depression and feelings of ineffectiveness and inadequacy between the various categories of the BULIT. The differences between high risk and low risk subjects on more interpersonal and developmental variables (i.e., peer relationships, family relationships, and feelings of alienation from others) will be discussed next.

The relationship of these important developmental variables to either the development or sequelae of bulimia has been studied infrequently, with the majority of research in these areas focusing on anorexia nervosa. Consequently, the state of knowledge regarding the bulimic's level of distress over family and peer issues is in the preliminary stages of

investigation. The current study provides some insight into these relationships.

Subjects who scored in the high category on the BULIT were significantly more distressed in the areas of peer and family relationships and reported feeling more alienated from others as opposed to subjects who scored in the middle or low categories. Scores on the BULIT also were correlated positively with the Family Attitudes scale at ages 12-17, indicating that in the two younger age groups high BULIT scores were associated with disturbances in the subject's perception of her relationship with her family.

Adolescents typically move through a period of becoming closer to peers and less dependent on their families in a search for autonomy that is developmentally appropriate and necessary. However, when that task becomes unmanageable because of family dynamics and/or psychological difficulties on the part of the adolescent, it is possible that the adolescent will try to seek independence and control in maladaptive ways.

Those studies which have assessed the characteristics of the families of bulimics have found that bulimic subjects and their families reported less cohesion and expressiveness and more conflict and anger in their families than controls (e.g., Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986). Ordman

and Kirschenbaum also speculated that bulimics may use their eating disorder as an expression of the anger and resentment towards their families that they are constrained from expressing within the family. Similarly, Johnson and Larson (1982) suggested that bingeing and purging seemed to serve an anger-reducing function for bulimics within their families. The emphasis on avoiding overt tension and conflict in the families of bulimics may serve to limit the ability of the adolescent to learn effective means of coping with stress and frustration. As Peskin (1972) and Strober and Yager (1985) point out, young people who attempt to deal on a covert level with the disruptions of adolescence risk becoming overwhelmed by the challenges of that developmental period.

The finding by Humphrey (1986) that parents of bulimics give contradictory messages to their eating disordered daughters regarding issues of autonomy and control is interesting in light of the speculation that bulimics may use their maladaptive eating behaviors to avoid addressing developmental issues. Indeed, the present results tentatively suggest that a disturbance in the high risk adolescent's perception of her family varies with age and, potentially, with developmental concerns. In line with this, Zakin (1989) has hypothesized that conflicts over separation from the family may be expressed through eating disturbances,

especially since a high proportion of eating disordered individuals are reported to have developed an eating disturbance within the first year of living away from home (Ritvo, 1984).

Bulimic and bulimic-anorexic families also have been described as rigid, inflexible in terms of rules and roles, and as having strong interpersonal and subsystem boundaries (Kog & Vandereycken, 1989). It may be that these characteristics contribute to the feelings of alienation and social isolation that bulimics experience. Follansbee (personal communication, 1989), for example, suggests that bulimics are impaired in terms of interpersonal relationships in large part because of a pervasive sense of alienation. This clinical impression is supported by several empirical studies in which bulimics were found to be less well adjusted and to have less satisfactory peer relationships than nonbulimics (e.g., Herzog, Keller, Lavori, & Ott, 1987; Lacey, Coker, & Birtchnell, 1986; Norman & Herzog, 1984). The strong need for social approval by bulimics (Squires & Kagan, 1985) and their high degree of social dependency (Jacobson & Robins, 1989) may serve to increase the bulimic's sense of alienation when others are not able to meet those strong needs. In summary, then, it appears that bulimics' relationships with their families are impaired to a certain degree and that there

is also some disturbance in peer relationships. It should be noted, however, that the family characteristics and the quality of peer relationships discussed above are not unique to bulimics and their families. While other factors may eventually prove to distinguish between bulimic families and distressed families in general, this does not negate the importance of assessing and intervening in these areas. More research is clearly needed in order to explore and clarify the developmental aspects of the familial and peer relationships of bulimics.

The hypothesis that subjects at high risk for bulimia would express more dislike of and dissatisfaction with their body shapes than subjects at low risk was supported. This was especially true of those body parts that change shape during puberty. In fact, at all age levels a high score on the BULIT was highly correlated in a positive direction with feelings of body dissatisfaction and poor body image. This corroborates the findings of other researchers (e.g., Casper et al., 1981; Post & Crowther, 1985) who have found similar differences between the perceptions of body image and body dissatisfaction of normal and eating disordered subjects. Still other investigators, however, have not found a difference between body perceptions and attitudes of eating disordered and normal subjects (e.g., Counts & Adams, 1985;

Freeman et al., 1985). This may be explained by the method used to measure body dissatisfaction in the latter two studies. Both groups of researchers utilized a difference score based on the discrepancy between subjects' actual or reported weight/body size and ideal weight/body size. As Thompson et al. (1987) point out, emotional versus intellectually based estimates of body size may affect the results obtained, with emotionally based estimates tending to run higher than those that are intellectually obtained. The wording of the questions used to assess body dissatisfaction in the present study is designed to measure the emotional aspect of this area and may have more relevance for those subjects who are actively involved in trying to change their body shape through disturbed eating behaviors.

Interestingly, subjects of all ages were equally dissatisfied with their body shape. While this may be indicative of other influences, such as the societal valuation of thinness that affect all age levels, it also contradicts the findings of other researchers. For example, Davies & Furnham (1986) reported that older girls were more dissatisfied with their weight than were younger girls and Rauste-von Wright (1989) found that body image satisfaction varied with developmental level. It is possible that desire to lose weight and dissatisfaction with body shape are not

entirely comparable, an area worthy of further study. Raustevon Wright's examination of the longitudinal development of body dissatisfaction serves to point out the necessity of this type of study of developmental differences. The results obtained by a cross-sectional examination of body dissatisfaction (such as those explored in the present study) and, potentially, other variables may not accurately capture the true nature of developmental changes in psychological areas.

The hypothesis that subjects at high risk for bulimia would experience a greater amount of maturity fears was supported. High scorers on the BULIT expressed significantly more reservations about becoming adults than did middle and low scorers, suggesting that there is a relationship between bulimia and difficulty in coming to terms with the changes that will result from moving through the stages of adolescence into adulthood.

Very little work of an empirical nature has been done into the area of maturity fears as they relate to the development of bulimia. However, one of the more accepted theories regarding the causation of anorexia nervosa is that anorexia produces a psychobiological regression to an earlier prepubertal stage of development and may be an expression of an inability to cope with the stresses and demands of adolescence, including the demands of sexual maturity (Muus,

1985). This regression is reinforced by the relief it provides from adolescent turmoil and conflict within the family. Given that bulimics have been found to struggle with many of the same issues as anorexics (e.g., body image, perfectionism, family conflict), it follows that bulimics may also resort to disordered eating as a way of attempting to maintain a prepubertal shape and avoiding the demands of adolescence. The results of the current study provide partial support for this and suggest that this is an area worthy of further investigation.

While many of the hypotheses of this study were supported, some were not. With the exception of level of depression and perceptions of self-efficacy/inadequacy, there were no interactions between developmental level and level of BULIT score. There are several possible explanations for the absence of significant results in this area. First, even though preliminary studies have determined that the BULIT appears to be appropriate for use with junior high students (e.g., Stein & Brinza, 1989), there remains some doubt as to its validity in assessing at least the binge component of bulimia in younger adolescents, who tended to equate binging with overeating. Similarly, while Garner and Olmsted (1983) reported that the EDI is appropriate for use with 12-year-olds, they also indicated that younger individuals may benefit

from the presence of an examiner to answer questions. As the EDI, BDI, and BULIT were originally developed for adult and/or college-level populations, it is conceivable that the items on those questionnaires may not hold the same meaning or tap the same dimensions as they do in adults. Much remains unknown about the response patterns of younger individuals in these areas, as well as the types of difficulties that they may have in responding to the various questionnaires. It is possible that differential responding or confusion over critical items in the youngest age group may have contributed to the lack of interactions.

Second, the age groupings may have served to obscure any interactions. As was described previously, the age groups were 12-14 years, 15-17 years, and 18-20 years. These groupings were deemed appropriate as Blos (1962), among others, has separated adolescence into the approximate ages of 11-13 (early adolescence), 14-17 (middle adolescence), and 18-20 (late adolescence). However, it is important to realize that adolescents of the same age may not be at the same developmental level (Peterson & Taylor, 1980). The heterogeneity within age groups, therefore, may have affected the results of this study. Other variables may be more useful in assessing developmental differences. For example, prepubertal versus pubertal distinctions may have more meaning

than age in terms of the differences between subjects. Rutter (1989), for example, has suggested that chronological age reflects several different components, including cognitive level, biological maturity, and the type and duration of life experiences. Similarly, menarche and/or changes in secondary sex characteristics (i.e., puberty) have been linked with cognitive reorganization and improved expression of thoughts and feelings (Hart & Sarnoff, 1971; Kestenberg, 1961), and Whisnant & Zegans (1975) have suggested that puberty is the time during which the psychological and biological changes occurring throughout adolescence are organized and integrated. Koff et al. (1978) presented support for the hypothesis that menarche, rather than puberty, is closely associated with a better articulated and defined body image and a clearer sexual identification than that found in premenarcheal females. It seems clear that further investigation into the characteristics of pre- and post-puberty is warranted, and that these characteristics may have influenced the lack of interaction between the BULIT and age group.

In an alternative look at the effect of developmental level, there has been speculation in recent years that adolescence is becoming prolonged, with individuals staying in school longer and living with their families for longer periods of time. It may be that college students have not yet

become truly autonomous because of their continued reliance (in many cases) on their parents for financial and emotional support and their continued close ties to their peer group. Therefore, developmental differences between the age groups may not appear unless post-university subjects are also considered.

The third possibility for the lack of significant interactions in this study is that developmental level may not play a large role in many of the characteristics related to bulimia in adolescents. It is possible that bulimics in late adolescence are continuing to struggle with the developmental issues of their early adolescence, such as coming to terms with their changing bodies. If they have not successfully weathered these earlier tasks, older individuals may resort to maladaptive eating behaviors in order to cope with both the increased stress of dealing with age-appropriate tasks (e.g., separating from their families and becoming autonomous) for which they are psychologically unprepared and with more basic tasks which remain unresolved.

In summary, the present study was designed primarily to assess the concerns of subjects at high risk for bulimia at different developmental levels as well as to identify the psychological characteristics of high risk subjects across the age groups. It should be kept in mind that an inherent

limitation of this study is its inability to lead to causal conclusions. However, despite this and other limitations (e.g., age, height, and weight differences between the BULIT groups; less than optimal discrimination between the age groups; possible differential responding to questionnaires by younger subjects), some interesting results were found which are deserving of further research.

For subjects who scored in the high group on the BULIT, level of depression and feelings of ineffectiveness and inadequacy varied as a function of age, with younger high risk subjects experiencing more depression and older high risk subjects reporting more feelings of ineffectiveness and inadequacy. The implications of this are twofold. Bulimic behavior may have more serious consequences, at least in the area of depression, in younger individuals. On the other hand, it is possible that adolescents who are having difficulty with developmental tasks begin to experience depression and/or a lack of control over their environment that culminates in an eating disorder.

Across all ages, high scorers on the BULIT were significantly more distressed on a number of variables than were low scorers. Specifically, subjects who fell into the high BULIT category were more dissatisfied with their body shape, were more depressed, experienced more difficulty with

peer and family relationships, and felt more alienated from others than did subjects who fell into the low BULIT category. These results were discussed within a developmental framework, and it was suggested that individuals who cannot come to terms with the multiple changes of adolescence are at increased risk for engaging in bulimic behavior.

Several etiological theories regarding the development of bulimia were discussed. It is suggested here that these cannot be considered in isolation from each other. Bulimia is not a simplistic disorder, nor is the society in which it is thriving, with children and adolescents receiving contradictory information from many sources. Those who become overwhelmed by the difficulty involved in negotiating their way through this maze on their way to adulthood are likely responding to multiple forces.

The ultimate aim of research in the area of eating disorders is to develop effective primary, secondary, and tertiary prevention programs. At the present time, knowledge of the etiology of eating disorders is not sufficient to make these programs optimally effective. However, future research on bulimia which addresses the issues of 1) psychological characteristics of nonclinical samples, 2) psychological characteristics of adolescents at each developmental level, 3) longitudinal studies and 4) family and peer relationships

will contribute significantly to the improvement of educational and treatment programs.

References

- American Psychiatric Association. (1987). Diagnostic and statistical manual of mental disorders (3rd edition - revised). Washington, D.C.: Author.
- Beck, A.T. (1978). Depression inventory. Philadelphia: Center for Cognitive Therapy.
- Beck, A.T., Ward, C., Mendelson, M., Mock, J., & Ehrbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.
- Bem, S.L. (1974). The measure of psychological androgyny. Journal of Consulting and Clinical Psychology, 42, 155-162.
- Birtchnell, S.A., Dolan, B.M., & Lacey, J.H. (1987). Body image distortion in non-eating disordered women. International Journal of Eating Disorders, 6, 385-391.
- Blos, P. (1962). On adolescence. New York: Free Press.
- Bobko, P. & Schwartz, J.P. (1984). A metric for integrating theoretically related but statistically uncorrelated constructs. Journal of Personality Assessment, 48, 11-16.
- Boskind-Lodahl, M. (1976). Cinderella's stepsisters: A feminist perspective on anorexia nervosa and bulimia. Signs: Journal of Women in Culture and Society, 2, 342-356.
- Boskind-White, M. & White, W.C. (1987). Bulimarexia: The binge/purge cycle. New York: Norton.
- Bruch, H. (1973). Eating disorders: Obesity, anorexia nervosa, and the person within. New York: Basic.
- Bumberry, W., Oliver, J.M., & McClure, J.N. (1978). Validation of the Beck Depression Inventory in a university population using psychiatric estimates as the criterion. Journal of Consulting and Clinical Psychology, 46, 153-161.
- Button, E., Fransella, F., & Slade, P. (1977). A reappraisal of body perception disturbance in anorexia

- nervosa. Psychological Medicine, 7, 235-243.
- Carter, J.A. & Duncan, P.A. (1984). Binge-eating and vomiting: A survey of a high school population. Psychology in the Schools, 21, 198-203.
- Casper, R.C., Halmi, K.A., Goldberg, S.C., Eckert, E.D., & Davis, J.M. (1979). Disturbances in body image estimation as related to other characteristics and outcome in anorexia nervosa. British Journal of Psychiatry, 134, 60-66.
- Casper, R.C., Offer, D., & Ostrov, E. (1981). The self-image of adolescents with acute anorexia nervosa. The Journal of Pediatrics, 98, 656-661.
- Chernin, K. (1981). The obsession: Reflections on the tyranny of slenderness. New York: Harper & Row.
- Chiles, J.A., Miller, M.L., & Cox, G.B. (1977). Depression in an adolescent delinquent population. Archives in General Psychiatry, 37, 1179-1184.
- Coche, E. & Taylor, S. (1974). Correlations between the Offer Self-Image Questionnaire and the Minnesota Multiphasic Personality Inventory in a psychiatric hospital population. Journal of Youth and Adolescence, 3, 145-152.
- Cook, T.D. & Campbell, D.T. (1979). Quasi-experimentation: Design and analysis issues for field settings. Boston: Houghton Mifflin Company.
- Cooper, P.J., Taylor, M.J., Cooper, Z., & Fairburn, C.G. (1987). The development and validation of the Body Shape Questionnaire. International Journal of Eating Disorders, 6, 485-494.
- Counts, C.R. & Adams, H.E. (1985). Body image in bulimic, dieting, and normal females. Journal of Psychopathology and Behavioral Assessment, 7, 289-300.
- Crisp, A.H. (1977). Some psychobiological aspects of adolescent growth and their relevance for the fat/thin syndrome (anorexia nervosa). International Journal of Obesity, 1, 231-238.
- Crowther, J.H. & Chernyk, B. (1986). Bulimia and binge

- eating in adolescent females: A comparison. Addictive Behaviors, 11, 415-424.
- Davies, E. & Furnham, A. (1986). The dieting and body shape concerns of adolescent females. Journal of Child Psychology and Psychiatry, 27, 417-428.
- Desmond, S.M., Price, J.H., Gray, N., & O'Connell, J.K. (1986). The etiology of adolescents' perceptions of their weight. Journal of Youth and Adolescence, 15, 461-474.
- Fisher, S. (1964). Sex differences in body perception. Psychological Monographs, 78, 1-22.
- Flaherty, J.R. & Dusek, J.B. (1980). An investigation of the relationship between psychological androgyny and components of self-concept. Journal of Personality and Social Psychology, 38, 984-992.
- Freeman, R., Thomas, C., Solyom, L., & Miles, J. (1983). Body image disturbances in anorexia nervosa: A re-examination and a new technique. In P. Darby, P. Garfinkel, D. Garner, and D. Coscina (Eds.), Anorexia nervosa: Recent developments. New York: Alan R. Liss.
- Freeman, R., Thomas, C., Solyom, L., & Koopman, R. (1985). Clinical and personality correlates of body size overestimation in anorexia nervosa and bulimia nervosa. International Journal of Eating Disorders, 4, 439-456.
- Garner, D.M. & Garfinkel, P.E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. Psychological Medicine, 9, 273-279.
- Garner, D.M. & Garfinkel, P.E. (1980). Socio-cultural factors in the development of anorexia nervosa. Psychological Medicine, 10, 647-656.
- Garner, D.M. & Garfinkel, P.E. (1981). Body image in anorexia nervosa: Measurement, theory, and clinical implications. International Journal of Psychiatry in Medicine, 11, 263-284.
- Garner, D.M., Garfinkel, P.E., Schwartz, D.M., & Thompson, M.G. (1980). Cultural expectation of

- thinness in women. Psychological Reports, 47, 483-491.
- Garner, D.M. & Olmsted, M.P. (1983). Manual for Eating Disorder Inventory (EDI). Psychological Assessment Resources, Inc.
- Garner, D.M., Olmsted, M.P., Polivy, J., & Garfinkel, P.E. (1984). Comparison between weight preoccupied women and anorexia nervosa. Psychosomatic Medicine, 9, 54-60.
- Gleghorn, A.A., Penner, L.A., Powers, P.S., & Schulman, R. (1987). The psychometric properties of several measures of body image. Journal of Psychopathology and Behavioral Assessment, 9, 203-218.
- Goodsitt, A. (1984). Self-psychology and the treatment of anorexia nervosa. In D.M. Garner & P.E. Garfinkel (Eds.), A Handbook of Psychotherapy for Anorexia Nervosa and Bulimia. New York: Guilford.
- Greenfeld, D., Quinlan, D.M., Harding, P., Glass, E., & Bliss, A. (1987). Eating behavior in an adolescent population. International Journal of Eating Disorders, 6, 99-111.
- Hall, J.A. & Halberstadt, A.G. (1980). Masculinity and femininity in children: Development of the Children's Personal Attributes Questionnaire. Developmental Psychology, 16, 270-280.
- Halmi, K.A., Falk, J.R., & Schwartz, E. (1981). Binge-eating and vomiting: A survey of a college population. Psychological Medicine, 11, 697-706.
- Hart, K.J. & Ollendick, T.H. (1985). Prevalence of bulimia in working and university women. American Journal of Psychiatry, 142, 851-854.
- Hawkins, I.I., & Clement, P.F. (1980). Development and construct validation of a self-report measure of binge-eating tendencies. Addictive Behaviors, 7, 435-439.
- Herzog, D.B., Deller, M.B., Lavori, P.W., & Ott, I.L. (1987). Social impairment in bulimia. International Journal of Eating Disorders, 6, 741-747.

- Hinz, L.D. & Williamson, D.A. (1987). Bulimia and depression: A review of the affective variant hypothesis. Psychological Bulletin, 102, 150-158.
- Holleran, P.R., Pascale, J., & Fraley, J. (1988). Personality correlates of college age bulimics. Journal of Counseling and Development, 66, 378-381.
- Hsu, L.K.G. (1982). Is there a disturbance in body image in anorexia nervosa? Journal of Nervous and Mental Disease, 170, 305-307.
- Huenemann, R.L., Shapiro, L.R., Hampton, M.C., & Mitchell, B.E. (1966). A longitudinal study of gross body composition and body conformation and their association with food and activity in a teenage population. American Journal of Clinical Nutrition, 18, 325-388.
- Humphrey, L.L. (1986). Family relations in bulimic-anorexic and nondistressed families. International Journal of Eating Disorders, 5, 223-232.
- Jacobson, R. & Robins, C.J. (1989). Social dependency and social support in bulimic and nonbulimic women. International Journal of Eating Disorders, 8, 665-670.
- Johnson, C. & Berndt, D.J. (1983). Preliminary investigation of bulimia and life adjustment. American Journal of Psychiatry, 140, 774-777.
- Johnson, C. & Flach, J. (1985). Family characteristics of 105 patients with bulimia. American Journal of Psychiatry, 142, 1321-1324.
- Johnson, C. & Larson, R. (1982). Bulimia: An analysis of moods and behavior. Psychosomatic Medicine, 4, 341-351.
- Johnson, C.L., Lewis, C., Love, S., Stuckey, M., & Lewis, L. (1983). A descriptive survey of dieting and bulimic behavior in a female high school population. Understanding anorexia nervosa and bulimia. Columbus, Ohio: Ross Laboratories.
- Johnson, C., Lewis, C., Love, S., Lewis, L., & Stuckey, M. (1984). Incidence and correlates of bulimic

- behavior in a female high school population. Journal of Youth and Adolescence, 13, 15-26.
- Johnson, C. & Maddi, K.L. (1986). The etiology of bulimia: Biopsychosocial perspectives. Adolescent Psychiatry, 13, 253-273.
- Katzman, M.A. & Wolchik, S.A. (1984). Bulimia and binge eating in college women: A comparison of personality and behavioral characteristics. Journal of Consulting and Clinical Psychology, 52, 423-428.
- Katzman, M.A., Wolchik, S.A., & Braver, S.L. (1984). The prevalence of frequent binge-eating and bulimia in a non-clinical college sample. International Journal of Eating Disorders, 3, 53-61.
- Koff, E., Rierdan, J., & Silverstone, E. (1978). Changes in representation of body image as a function of menarcheal status. Developmental Psychology, 14, 635-642.
- Kog, E. & Vandereycken, W. (1989). Family interaction in eating disorder patients and normal controls. International Journal of Eating Disorders, 8, 11-23.
- Lacey, J.H., Coker, S., & Birtchnell, S.A. (1986). Bulimia: Factors associated with its etiology and maintenance. International Journal of Eating Disorders, 5, 475-487.
- LaFrance, M. & Carmen, B. (1980). The non-verbal display of psychological androgyny. Journal of Personality and Social Psychology, 38, 36-49.
- Leon, G.R. & Finn, S. (1984). Sex-role stereotypes and the development of eating disorders. In C.S. Widom (Ed.), Sex roles and psychopathology. New York: Plenum Press.
- Leon, G.R., Lucas, A.R., Colligan, R.C., Ferdinande, R.J., & Kamp, R.J. (1985). Sexual, body-image, and personality attitudes in anorexia nervosa. Journal of Abnormal Child Psychology, 13, 245-258.
- Lewis, L. & Johnson, C. (1985). A comparison of sex-role orientation between women with bulimia and normal controls. International Journal of Eating

Disorders, 4, 247-257.

- Murphy, R.L. (1972). Body image development in adulthood. Nursing Clinics of North America, 7, 617-630.
- Muuss, R.E. (1985). Adolescent eating disorder: Anorexia Nervosa. Adolescence, 20, 525-536.
- Norman, D.K. & Herzog, D.B. (1984). Persistent social maladjustment in bulimia: A 1-year follow-up. American Journal of Psychiatry, 141, 444-446.
- Offer, D. (1969). The psychological world of the adolescent. New York: Basic Books.
- Offer, D., Ostrov, E., & Howard, K.I. (1977). The Offer Self-Image Questionnaire for Adolescents: A manual (revised). Chicago: Michael Reese Hospital and Medical Center.
- Ordman, A.M., & Kirschenbaum, D.S. (1986). Bulimia: Assessment of eating, psychological adjustment, and familial characteristics. International Journal of Eating Disorders, 5, 865-878.
- Peskin, H. (1972). Multiple prediction of adult psychological health from preadolescent and adolescent behavior. Journal of Consulting and Clinical Psychology, 38, 155-160.
- Petersen, A.C. & Taylor, B. (1980). The biological approach to adolescence: Biological change and psychological adaptation. In J. Adelson (Ed.), Handbook of adolescence^{psychology}. New York: Wiley.
- Piaget, J. & Inhelder, B. (1969). The psychology of the child. New York: Basic Books.
- Pope, H.G., Jr., Hudson, J.I., Yurgelun-Todd, D., & Hudson, M.S. (1984). Prevalence of anorexia nervosa and bulimia in three student populations. International Journal of Eating Disorders, 3, 45-52.
- Post, G. & Crowther, J.H. (1985). Variables that discriminate bulimic from nonbulimic adolescent females. Journal of Youth and Adolescence, 14, 85-98.

- Pyle, R.L., Mitchell, J.E., Eckert, E.D., Halvorson, P.A., Nueman, P.A., & Goff, G.M. (1982). The incidence of bulimia in freshman college students. International Journal of Eating Disorders, 2, 75-85.
- Pyle, R.L. & Mitchell, J.E. (1986). The prevalence of bulimia in selected samples. Adolescent Psychiatry, 13, 241-252.
- Rauste-von Wright, M. (1989). Body image satisfaction in adolescent girls and boys: A longitudinal study. Journal of Youth and Adolescence, 18, 71-83.
- Rosen, J.C., Gross, J., & Vara, L. (1987). Psychological adjustment of adolescents attempting to lose or gain weight. Journal of Consulting and Clinical Psychology, 55, 742-747.
- Russell, G. (1979). Bulimia nervosa: An ominous variant of anorexia nervosa. Psychosomatic Medicine, 9, 429-448.
- Rutter, M. (1989). Age as an ambiguous variable in developmental research: Some epidemiological considerations from developmental psychopathology. International Journal of Behavioral Development, 12, 1-34.
- Schonfeld, W.A. (1971). The body and the body-image in adolescents. In G. Caplan & S. Lebovici (Eds.), Adolescence: Psychosocial perspectives. New York: Basic Books.
- Smith, M.C. & Thelen, M.H. (1984). Development and validation of a test for bulimia. Journal of Consulting and Clinical Psychology, 52, 863-872.
- Spence, J.T. (1982). Comments on Baumrind's "Are androgynous individuals more effective persons and parents?" Child Development, 53, 76-80.
- Spence, J.T. & Helmreich, R.L. (1978). Masculinity and femininity: Their psychological dimensions, correlates, and antecedents. Austin: University of Texas Press.
- Spence, J.T., Helmreich, R.L., & Stapp, J. (1975). Ratings of self and peers on sex-role attributes and their relation to self-esteem and conceptions of

- masculinity and femininity. Journal of Personality and Social Psychology, 3, 29-39.
- Squires, R.L. & Kagan, D.M. (1985). Sex-role and eating behaviors among college women. International Journal of Eating Disorders, 4, 539-548.
- Stein, D.M. & Brinza, S.R. (1989). The Bulimia Test: Factor structure in junior high school, high school, and college women. International Journal of Eating Disorders, 8, 225-230.
- Strober, M. (1981). The significance of bulimia in juvenile anorexia nervosa: An exploration of possible etiologic factors. International Journal of Eating Disorders, 1, 28-43.
- Strober, M. (1981). A comparative analysis of personality organization in juvenile anorexia nervosa. Journal of Youth and Adolescence, 10, 285-295.
- Strober, M., Green, J., & Carlson, G. (1981). Utility of the Beck Depression Inventory with psychiatrically hospitalized adolescents. Journal of Consulting and Clinical Psychology, 49, 482-483.
- Strober, M. & Yager, J. (1985). A developmental perspective on the treatment of anorexia nervosa in adolescents. In D.M. Garner & P.E. Garfinkel (Eds.), Handbook of Psychotherapy for Anorexia Nervosa and Bulimia. New York: The Guilford Press.
- Thelen, M.H., McLaughlin-Mann, L., Pruitt, J., & Smith, M. (1987). Bulimia prevalence and component factors in college women. Journal of Psychosomatic Research, 31, 73-78.
- Thompson, D.A., Berg, K.M., & Shatford, L.A. (1987). The heterogeneity of bulimic symptomatology: Cognitive and behavioral dimensions. International Journal of Eating Disorders, 6, 215-234.
- Thompson, J.K., Berland, N.W., Linton, P.H., & Weinsier, R.L. (1986). Utilization of a self-adjusting light beam in the objective assessment of body distortion in seven eating disorder groups. International Journal of Eating Disorders, 5, 113-120.

- Thompson, J.K., Dolce, J.J., Spana, R.E., & Register, A. (1987). Emotionally versus intellectually based estimates of body size. International Journal of Eating Disorders, 6, 507-513.
- Tobin-Richards, M.H., Boxer, A.M., McNeill-Kavrell, S.A., & Petersen, A.C. (1984). Puberty and its psychological and social significance. In R.M. Lerner and N.L. Galambos (Eds.), Experiencing adolescents: A sourcebook for parents, teachers, and teens. New York: Garland Publishing Company.
- Vanderheyden, D.A. & Boland, F.J. (1987). A comparison of normals, mild, moderate, and severe binge eaters, and binge vomiters using discriminant function analysis. International Journal of Eating Disorders, 6, 331-337.
- VanThorre, M.D. & Vogel, F.X. (1985). The presence of bulimia in high school females. Adolescence, 20, 45-51.
- Weiss, S.R. & Ebert, M.H. (1983). Psychological and behavioral characteristics of normal-weight bulimics and normal-weight controls. Psychosomatic Medicine, 45, 293-303.
- Wertheim, E.H. (1989). Analysis of the internal consistency and component parts of the Bulimia Test using both university and eating problem samples. International Journal of Eating Disorders, 8, 325-334.
- Wooley, S.C. & Wooley, O.W. (1985). Intensive outpatient and residential treatment for bulimia. In D.M. Garner & P.E. Garfinkel (Eds.), Handbook of Psychotherapy for anorexia nervosa and bulimia. New York: The Guilford Press.
- Zakin, D.F. (1989). Eating disturbance, emotional separation, and body image. International Journal of Eating Disorders, 8, 411-416.

APPENDIX A

Consent Form - Middle and High School

CONSENT FORM

The purpose of this project is to assess factors related to the development of eating problems in females. Identifying such factors is important in order to develop effective prevention and treatment programs for eating problems. You will be asked to complete several questionnaires dealing with your eating behaviors and with how you feel about yourself. Some of these questions may be sensitive and personal in nature. Questionnaires will be completed privately at home and will take approximately 45 minutes to complete. This project has been approved by your school and the Human Subjects Research Committee and the Institutional Review Board of Virginia Tech.

Strict confidentiality of results will be maintained. You will be assigned an identification number at the beginning of the project and will not be identified by name or other identifiers in subsequent reporting of results. All personal identification will be removed from questionnaires and no person or agency, other than myself, will have access to the results of the individual questionnaires. Only group data will be reported. You are free to discontinue your participation at any time without prejudice or penalty.

Given the potential seriousness of some eating problems such as bulimia or anorexia nervosa, if you are so identified both you and your parents/guardian will be provided with a referral to an appropriate source in order to obtain help in dealing with your eating problems. It is, of course, your responsibility to follow through with this referral and to seek help if it is appropriate.

Your parents/guardian must give their permission for you to participate before you can take part in this project. Please have them sign the enclosed form and return it with your own signature to your teacher.

If you or your parents/guardian have questions about this project, please call me at 951-8242, Dr. Thomas Ollendick at 961-6451, or Dr. Stephen Zaccaro (Human Subjects Committee Chairperson) at 961-7916.

Sincerely,

Kimberly McLaughlin, M.S.

Thomas H. Ollendick, Ph.D.

I hereby allow/do not allow my daughter, _____,
to participate in the research project described above and
under the conditions described above.

Signature of parent or guardian

I hereby agree to voluntarily participate in the research
project described above and under the conditions described
above.

NAME (PLEASE PRINT)

APPENDIX B

Consent Form - University

CONSENT FORM

The purpose of this project is to assess factors related to the development of eating problems in females. Identifying such factors is important in order to develop effective prevention and treatment programs for eating problems. You will be asked to complete several questionnaires dealing with your eating behaviors and with how you feel about yourself. Some of these questions may be sensitive and personal in nature. Questionnaires will be completed privately at home and will take approximately 45 minutes to complete. This project has been approved by the Human Subjects Research Committee and the Institutional Review Board of Virginia Tech.

Strict confidentiality of results will be maintained. You will be assigned an identification number at the beginning of the project and will not be identified by name or other identifiers in subsequent reporting of results. All personal identification will be removed from questionnaires and no person or agency, other than myself, will have access to the results of the individual questionnaires. Only group data will be reported. You are free to discontinue your participation at any time without prejudice or penalty.

As a result of your participation in this project, you will earn one (1) extra credit point toward your grade in your psychology class. You must return the questionnaires in order to receive credit for participation.

Given the potential seriousness of some eating problems such as bulimia or anorexia nervosa, if you are so identified you will be provided with a referral to an appropriate source in order to obtain help in dealing with your eating problems. It is, of course, your responsibility to follow through with this referral and to seek help if it is appropriate.

If you have questions about this project, please call me at 951-8242, Dr. Thomas Ollendick at 961-6451, or Dr. Stephen Zaccaro (Human Subjects Committee Chairperson) at 961-7916.

Sincerely,

Kimberly McLaughlin, M.S.

Thomas H. Ollendick, Ph.D.

I agree to participate in the study described above, under the conditions described above.

NAME

STUDENT NUMBER

APPENDIX C
Demographic Information Sheet

Information Sheet

Name _____ Date _____

Age _____ Sex _____ Grade _____

Present Weight _____ Height _____

Highest past weight _____ lbs.

How long ago? _____ months

How long did you weigh this weight? _____ months

What do you consider your ideal weight? _____ lbs.

Age at which weight problems began (if any) _____

Are you currently dieting? _____

Is anyone in your family currently dieting? _____

If yes, who? _____

Please list any organized sports in which you are involved this year.

Please fill in the number of times per week and amount of time per week that you currently engage in the following activities.

Jogging ___ times/week ___ minutes/week ___ miles/week
 Swimming ___ times/week ___ minutes/week
 Aerobic Dance ___ times/week ___ minutes/week
 Bicycling ___ times/week ___ minutes/week ___ miles/week
 Weight lifting ___ times/week ___ minutes/week
 Other activities _____

Are any of the activities listed above part of a training program for any organized sport? _____ If yes, which activities? _____

Please list any extracurricular activities in which you participate (e.g., band, clubs, etc.) _____

APPENDIX D

Bulimia Test (BULIT)

The BULIT

Answer each question on the following pages by filling in the appropriate circles 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. Do you ever eat uncontrollably to the point of stuffing yourself (i.e., going on eating binges)?

| | |
|-------------------------------------|------------------------|
| (a) once a month or less (or never) | (d) 3-6 times a week |
| (b) 2-3 times a month | (e) once a day or more |
| (c) once or twice a week | |
2. I am satisfied with my eating patterns.

| | |
|-----------------------|-----------------------|
| (a) Agree | (d) Disagree |
| (b) Neutral | (e) Disagree strongly |
| (c) Disagree a little | |
3. Have you ever kept eating until you thought you'd explode?

| | |
|----------------------------------|---------------------|
| (a) practically every time I eat | (d) sometimes |
| (b) very frequently | (e) seldom or never |
| (c) often | |
4. Would you presently call yourself a "binge eater"?

| | |
|---------------------|----------------------|
| (a) Yes, absolutely | (d) Yes, possibly |
| (b) Yes | (e) No, probably not |
| (c) Yes, probably | |
5. I prefer to eat:

| | |
|----------------------------|-------------------------|
| (a) at home alone | (d) at a friend's house |
| (b) at home with others | (e) doesn't matter |
| (c) in a public restaurant | |
6. Do you feel you have control over the amount of food you consume?

| | |
|-----------------------------|------------|
| (a) most or all of the time | (d) rarely |
| (b) a lot of the time | (e) never |
| (c) occasionally | |
7. I use laxatives or suppositories to help control my weight.

| | |
|--------------------------|-------------------------------------|
| (a) once a day or more | (d) 2-3 times a month |
| (b) 3-6 times a week | (e) once a month or less (or never) |
| (c) once or twice a week | |
8. I eat until I feel too tired to continue.

| | |
|--------------------------|-------------------------------------|
| (a) at least once a day | (d) 2-3 times a month |
| (b) 3-6 times a week | (e) once a month or less (or never) |
| (c) once or twice a week | |
9. How often do you prefer eating ice cream, milk shakes, or puddings during a binge?

| | |
|----------------|---------------------|
| (a) always | (d) seldom or never |
| (b) frequently | (e) I don't binge |
| (c) sometimes | |
10. How much are you concerned about your eating binges?

| | |
|-------------------------|---|
| (a) I don't binge | (d) major concern |
| (b) bothers me a little | (e) probably the biggest concern in my life |
| (c) moderate concern | |
11. Most people I know would be amazed if they knew how much food I can consume at one sitting.

| | |
|---------------------|--------------|
| (a) without a doubt | (d) possibly |
| (b) very probably | (e) no |
| (c) probably | |
12. Do you ever eat to the point of feeling sick?

| | |
|---------------------|---------------------|
| (a) very frequently | (d) occasionally |
| (b) frequently | (e) rarely or never |
| (c) fairly often | |
13. I am afraid to eat anything for fear that I won't be able to stop.

| | |
|-------------------|---------------------|
| (a) always | (d) sometimes |
| (b) almost always | (e) seldom or never |
| (c) frequently | |

14. I don't like myself after I eat too much.
 (a) always (d) seldom or never
 (b) frequently (e) I don't eat too much.
 (c) sometimes
15. How often do you intentionally vomit after eating?
 (a) 2 or more times a week (d) once a month
 (b) once a week (e) less than once a month
 (c) 2-3 times a month (or never)
16. Which of the following describes your feelings after binge eating?
 (a) I don't binge eat. (d) I feel quite upset with myself.
 (b) I feel o.k. (e) I hate myself.
 (c) I feel mildly upset with myself.
17. I eat a lot of food when I'm not even hungry.
 (a) very frequently (d) sometimes
 (b) frequently (e) seldom or never
 (c) occasionally
18. My eating patterns are different from the eating patterns of most people.
 (a) always (d) sometimes
 (b) almost always (e) seldom or never
 (c) frequently
19. I have tried to lose weight by fasting or going on "crash" diets.
 (a) not in the past year (d) 4-5 times in the past year
 (b) once in the past year (e) more than 5 times in the
 (c) 2-3 times in the past year past year
20. I feel sad or blue after eating more than I'd planned to eat.
 (a) always (d) sometimes
 (b) almost always (e) seldom, never, or not applicable
 (c) frequently
21. When engaged in an eating binge, I tend to eat foods that are high in carbohydrates (sweets and starches).
 (a) always (d) sometimes
 (b) almost always (e) seldom, or I don't binge
 (c) frequently
22. Compared to most people, my ability to control my eating behavior seems to be:
 (a) greater than others' ability (d) much less
 (b) about the same (e) I have absolutely no control
 (c) less
23. One of your best friends suddenly suggests that you both eat at a new restaurant buffet that night. Although you'd planned on eating something light at home, you go ahead and eat out, eating quite a lot and feeling uncomfortably full. How would you feel about yourself on the ride home?
 (a) Fine, glad I'd tried that new restaurant (d) Upset with myself
 (b) A little regretful that I'd eaten so much (e) Totally disgusted with myself
 (c) Somewhat disappointed in myself
24. I would presently label myself a "compulsive eater" (one who engages in episodes of uncontrolled eating).
 (a) absolutely (d) yes, possibly
 (b) yes (e) no, probably not
 (c) yes, probably
25. What is the most weight you've ever lost in one month?
 (a) over 20 pounds (d) 4-7 pounds
 (b) 12-20 pounds (e) less than 4 pounds
 (c) 8-11 pounds
26. If I eat too much at night, I feel depressed the next morning.
 (a) always (d) seldom or never
 (b) frequently (e) I don't eat too much at night.
 (c) sometimes
27. Do you believe that it is easier for you to vomit than it is for most people?
 (a) Yes, it's no problem for me at all (d) about the same
 (b) Yes, it's easier (e) No, it's less easy
 (c) Yes, it's a little easier

28. I feel that food controls my life.
(a) always (d) sometimes
(b) almost always (e) seldom or never
(c) frequently
29. I feel depressed immediately after I eat too much.
(a) always (d) seldom or never
(b) frequently (e) I don't eat too much.
(c) sometimes
30. How often do you vomit after eating in order to lose weight?
(a) less than once a month (or never) (d) once a week
(b) once a month (e) 2 or more times a week
(c) 2-3 times a month
31. When consuming a large quantity of food, at what rate of speed do you usually eat?
(a) more rapidly than most people have ever eaten in their lives
(b) a lot more rapidly than most people
(c) a little more rapidly than most people
(d) about the same rate as most people
(e) more slowly than most people (or not applicable)
32. What is the most weight you've ever gained in one month?
(a) over 20 pounds (d) 4-7 pounds
(b) 12-20 pounds (e) less than 4 pounds
(c) 8-11 pounds
33. FEMALES ONLY. My last menstrual period was:
(a) within the past month (d) within the past 6 months
(b) within the past 2 months (e) not within the past 6 months
(c) within the past 4 months
34. I use diuretics (water pills) to help control my weight.
(a) once a day or more (d) 2-3 times a month
(b) 3-6 times a week (e) once a month or less (or never)
(c) once or twice a week
35. How do you think your appetite compares with that of most people you know?
(a) many times larger than most (d) about the same
(b) much larger (e) smaller than most
(c) a little larger
36. FEMALES ONLY. My menstrual cycles occur once a month.
(a) always (d) seldom
(b) usually (e) never
(c) sometimes

APPENDIX E

Eating Disorder Inventory (EDI)

1 2 3 4 5 6
 never always

34. I have trouble expressing my emotions to others.
35. The demands of adulthood are too great.
36. I hate being less than best at things.
37. I feel secure about myself.
38. I think about bingeing (overeating).
39. I feel happy that I am not a child anymore.
40. I get confused as to whether or not I am hungry.
41. I have a low opinion of myself.
42. I feel that I can achieve my standards.
43. My parents have expected excellence of me.
44. I worry that my feelings will get out of control.
45. I think my hips are too big.
46. I eat moderately in front of others and stuff myself when they're gone.
47. I feel bloated after eating a normal meal.
48. I feel that people are happiest when they are children.
49. If I gain a pound, I worry that I will keep gaining.
50. I feel that I am a worthwhile person.
51. When I am upset, I don't know if I am sad, frightened, or angry.
52. I feel that I must do things perfectly or not do them at all.
53. I have the thought of trying to vomit in order to lose weight.
54. I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).
55. I think that my thighs are just the right size.
56. I feel empty inside (emotionally).
57. I can talk about personal thoughts or feelings.
58. The best years of your life are when you become an adult.
59. I think my buttocks are too large.
60. I have feelings I can't quite identify.
61. I eat or drink in secrecy.
62. I think that my hips are just the right size.
63. I have extremely high goals.
64. When I am upset, I worry that I will start eating.

APPENDIX F

Children's Personal Attributes Questionnaire (CPAQ)

Children's Personal Attributes Questionnaire

The items below ask about what kind of person you think you are. Each item is followed by the numbers 1 through 4, which form a scale upon which to rate the items. You are to choose the number that best describes where you fall on the scale. Please use a pencil to color in the number of your choice on the answer sheet.

- 1 = very true of me
- 2 = mostly true of me
- 3 = a little true of me
- 4 = not at all true of me

1. I am often very pushy with other people.
2. I would rather do things for myself than ask others for help.
3. My artwork and ideas are creative and good.
4. I am not good at fixing things or working with tools.
5. I am a quiet person.
6. I am often the leader among my friends.
7. I try to do everything I can for the people I care about.
8. I am a gentle person.
9. I do not help other people very much.
10. It is easy for people to make me change my mind.
11. I like children and babies a lot.
12. I am kind to other people almost all of the time.
13. It is hard to hurt my feelings.
14. It is hard for me to make up my mind about things.
15. I give up easily.
16. I cry when things upset me.
17. In most ways, I am better than most of the others my age.
18. I almost always stand up for what I believe in.
19. I am a very considerate person.
20. I like art and music a lot.
21. When things get tough, I almost always keep going.

APPENDIX G

Offer Self-Image Questionnaire for Adolescents (OSIQ)

Offer Self-Image Questionnaire

This is a confidential self-image questionnaire. There are no right and/or wrong answers. Please answer all items. For each item, there is a choice of six answers. Please use a pencil to color in the circle of your choice on the answer sheet. Only ONE answer per item.

| | |
|---------------|----------------------|
| DESCRIBES ME: | DOES NOT: |
| 1=very well | 4=quite describe me |
| 2=well | 5=really describe me |
| 3=fairly well | 6=describe me at all |

1. I carry many grudges.
2. When I am with people, I am afraid that someone will make fun of me.
3. Most of the time, I think that the world is an exciting place to live in.
4. I think that I will be a source of pride to my parents in the future.
5. I would not hurt someone just for the "heck of it."
6. The recent changes in my body have given me some satisfaction.
7. I am going to devote my life to helping others.
8. I "lose my head" easily.
9. My parents are almost always on the side of someone else (e.g., my brother or sister).
10. The opposite sex finds me a bore.
11. If I would be separated from all the people I know, I feel that I would not be able to make a go of it.
12. I feel tense most of the time.
13. I usually feel out of place at picnics and parties.
14. I feel that working is too much responsibility for me.
15. My parents will be disappointed in me in the future.
16. It is very hard for a teenager to know how to handle sex in a right way.
17. At times I have fits of crying and/or laughing that I seem unable to control.
18. I am going to devote my life to making as much money as I can.
19. If I put my mind to it, I can learn almost anything.
20. Only stupid people work.
21. I am confused most of the time.
22. I feel inferior to most people I know.
23. Understanding my parents is beyond me.
24. I do not like to put things in order and make sense of them.
25. I can count on my parents most of the time.
26. In the past year, I have been very worried about my health.
27. Dirty jokes are fun at times.
28. I often blame myself even when I am not at fault.
29. I would not stop at anything if I felt I was done wrong.
30. My sex organs are normal.
31. Most of the time I am happy.

1=describes me very well
 2=describes me well
 3=describes me fairly well
 4=does not quite describe me
 5=does not really describe me
 6=does not describe me at all

32. I am going to devote myself to making the world a better place to live in.
33. I can take criticism without resentment.
34. My work, in general, is at least as good as the work of the girl next to me.
35. Sometimes I feel so ashamed of myself that I just want to hide in a corner.
36. I am sure that I will be proud about my future profession.
37. My feelings are easily hurt.
38. When a tragedy occurs to one of my friends, I feel sad too.
39. I blame others even when I know that I am fault, too.
40. When I want something, I just sit around wishing I could have it.
41. The picture I have of myself in the future satisfies me.
42. I am a superior student in school.
43. I feel relaxed under normal circumstances.
44. I feel empty emotionally most of the time.
45. I would rather sit around and loaf than work.
46. Even if it were dangerous, I would help someone who is in trouble.
47. Telling the truth means nothing to me.
48. Our society is a competitive one and I am not afraid of it.
49. I get violent if I don't get my way.
50. Most of the time, my parents get along well with each other.
51. I think that other people just do not like me.
52. I find it very difficult to establish new friendships.
53. I am so very anxious.
54. When my parents are strict, I feel that they are right, even if I get angry.
55. Working closely with another never gives me pleasure.
56. I am proud of my body.
57. At times I think about what kind of work I will do in the future.
58. Even under pressure, I manage to remain calm.
59. When I grow up and have a family, it will be in at least a few ways similar to my own.
60. I often feel that I would rather die than go on living.
61. I find it extremely hard to make friends.
62. I would rather be supported for the rest of my life than work.
63. I feel that I have a part in making family decisions.
64. I do not mind being corrected, since I can learn from it.

1=describes me very well
2=describes me well
3=describes me fairly well
4=does not quite describe me
5=does not really describe me
6=does not describe me at all

65. I feel so very lonely.
66. I do not care how my actions affect others as long as I gain something.
67. I enjoy life.
68. I keep an even temper most of the time.
69. A job well done gives me pleasure.
70. My parents are usually patient with me.
71. I seem to be forced to imitate the people I like.
72. Very often parents do not understand a person because they had an unhappy childhood.
73. For me, good sportsmanship in school is as important as winning a game.
74. I prefer being alone than with others my age.
75. When I decide to do something, I do it.
76. I think that boys find me attractive.
77. Other people are not after me to take advantage of me.
78. I feel there is plenty I can learn from others.
79. I do not attend sexy shows.
80. I fear something constantly.
81. Very often I think that I am not at all the person I would like to be.
82. I like to help a friend whenever I can.
83. If I know that I will have to face a new situation, I will try in advance to find out as much as is possible about it.
84. Usually I feel that I am a bother at home.
85. If others disapprove of me, I get terribly upset.
86. I like one of my parents much better than the other.
87. Being together with other people gives me a good feeling.
88. Whenever I fail in something, I try to find out what I can do in order to avoid another failure.
89. I frequently feel ugly and unattractive.
90. Sexually, I am way behind.
91. If you confide in others, you ask for trouble.
92. Even though I am continuously on the go, I seem unable to get things done.
93. When others look at me, they must think that I am poorly developed.
94. My parents are ashamed of me.
95. I believe I can tell the real from the fantastic.
96. Thinking or talking about sex frightens me.
97. I am against giving so much money to the poor.

1=describes me very well
2=describes me well
3=describes me fairly well
4=does not quite describe me
5=does not really describe me
6=does not describe me at all

98. I feel strong and healthy.
99. Even when I am sad, I can enjoy a good joke.
100. There is nothing wrong with putting oneself before others.
101. I try to stay away from home most of the time.
102. I find life an endless series of problems, without a solution in sight.
103. At times, I feel like a leader and feel that others can learn something from me.
104. I feel that I am able to make decisions.
105. I have been carrying a grudge against my parents for years.
106. I am certain that I will not be able to assume responsibilities for myself in the future.
107. When I enter a new room, I have a strange and funny feeling.
108. I feel that I have no talent whatsoever.
109. I do not rehearse how I might deal with a real coming event.
110. When I am with people, I am bothered by hearing strange noises.
111. Most of the time my parents are satisfied with me.
112. I do not have a particularly difficult time in making friends.
113. I do not enjoy solving difficult problems.
114. School and studying mean very little to me.
115. Eye for an eye and tooth for a tooth does not apply for our society.
116. Having a boyfriend is important to me.
117. I would not like to be associated with those kids who "hit below the belt."
118. Worrying a little about one's future helps to make it work out better.
119. I often think about sex.
120. Usually I control myself.
121. I enjoy most parties I go to.
122. Dealing with new intellectual subjects is a challenge for me.
123. I do not have many fears which I cannot understand.
124. No one can harm me just by not liking me.
125. I am fearful of growing up.
126. I repeat things continuously to be sure that I am right.
127. I frequently feel sad.

APPENDIX H

Beck Depression Inventory (BDI)

BECK INVENTORY

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY. Circle the number beside the statement you picked. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
 1 I feel sad.
 2 I am sad all the time and I can't snap out of it.
 3 I am so sad or unhappy that I can't stand it.
2. 0 I am not particularly discouraged about the future.
 1 I feel discouraged about the future.
 2 I feel I have nothing to look forward to.
 3 I feel that the future is hopeless and that things cannot improve.
3. 0 I do not feel like a failure.
 1 I feel I have failed more than the average person.
 2 As I look back on my life, all I can see is a lot of failures.
 3 I feel I am a complete failure as a person.
4. 0 I get as much satisfaction out of things as I used to.
 1 I don't enjoy things the way I used to.
 2 I don't get real satisfaction out of anything anymore.
 3 I am dissatisfied or bored with everything.
5. 0 I don't feel particularly guilty.
 1 I feel guilty a good part of the time.
 2 I feel quite guilty most of the time.
 3 I feel guilty all of the time.
6. 0 I don't feel I am being punished.
 1 I feel I may be punished.
 2 I expect to be punished.
 3 I feel I am being punished.
7. 0 I don't feel disappointed in myself.
 1 I am disappointed in myself.
 2 I am disgusted with myself.
 3 I hate myself.
8. 0 I don't feel I am any worse than anybody else.
 1 I am critical of myself for my weaknesses or mistakes.
 2 I blame myself all the time for my faults.
 3 I blame myself for everything all the time.
9. 0 I don't have any thoughts of killing myself.
 1 I have thoughts of killing myself, but I would not carry them out.
 2 I would like to kill myself.
 3 I would kill myself if I had the chance.
10. 0 I don't cry any more than usual.
 1 I cry more now than I used to.
 2 I cry all the time now.
 3 I used to be able to cry, but now I can't cry even though I want to.
11. 0 I am no more irritated now than I ever am.
 1 I get annoyed or irritated more easily than I used to.
 2 I feel irritated all the time now.
 3 I don't get irritated at all by the things that used to irritate me.
12. 0 I have not lost interest in other people.
 1 I am less interested in other people than I used to be.
 2 I have lost most of my interest in other people.
 3 I have lost all of my interest in other people.
13. 0 I make decisions about as well as I ever could.
 1 I put off making decisions more than I used to.
 2 I have greater difficulty in making decisions than before.
 3 I can't make decisions at all anymore.

14. 0 I don't feel I look any worse than I used to.
 1 I am worried that I am looking old or unattractive.
 2 I feel that there are permanent changes in my appearance that make me look unattractive.
 3 I believe that I look ugly.
15. 0 I can work about as well as before.
 1 It takes an extra effort to get started at doing something.
 2 I have to push myself very hard to do anything.
 3 I can't do any work at all.
16. 0 I can sleep as well as usual.
 1 I don't sleep as well as I used to.
 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
 3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get more tired than usual.
 1 I get tired more easily than I used to.
 2 I get tired from doing almost anything.
 3 I am too tired to do anything.
18. 0 My appetite is no worse than usual.
 1 My appetite is not as good as it used to be.
 2 My appetite is much worse than usual.
 3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any, lately.
 1 I have lost more than 5 pounds.
 2 I have lost more than 10 pounds.
 3 I have lost more than 15 pounds.
- I am purposely trying to lose weight
 by eating less. Yes ___ No ___
20. 0 I am no more worried about my health than usual.
 1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
 2 I am very worried about physical problems and it's hard to think of much else.
 3 I am so worried about my physical problems that I cannot think about anything else.
21. 0 I have not noticed any recent change in my interest in sex.
 1 I am less interested in sex than I used to be.
 2 I am much less interested in sex now.
 3 I have lost interest in sex completely.

CURRICULUM VITAE

Kimberly A. McLaughlin

ADDRESS

2415 West 6th Avenue
 Vancouver, British Columbia V6K 1W2

(604) 434-1331 Local 284 (work)

(604) 731-3353 (home)

CURRENT POSITION

Staff Psychologist
 Neuromotor Program and Brain Injury Program
 Sunny Hill Hospital for Children
 3644 Slocan
 Vancouver, British Columbia V5M 3E8

EDUCATION

Ph.D. in Clinical Psychology February 1990
 Virginia Polytechnic Institute and State University

Blacksburg, Virginia

Director of Clinical Training: Thomas H. Ollendick, Ph.D.

Dissertation Topic: Psychological Characteristics
 Related to Bulimia in Early and Late Adolescent
 Females.

Chairperson: Thomas H. Ollendick, Ph.D.

M.S. in Clinical Psychology June 1986

Virginia Polytechnic Institute and State University
 Blacksburg, Virginia

Director of Clinical Training: Thomas H. Ollendick, Ph.D.

Thesis Topic: The Effect of Androgyny and Self-Esteem
 on Classroom Behavior.

Chairperson: Cynthia G. Baum, Ph.D.

Bachelor of Arts June 1982

Pennsylvania State University
 University Park, Pennsylvania

Major Subject: Psychology

ACADEMIC DISTINCTIONS AND HONOURS

Graduated Magna Cum Laude, 1982
Pennsylvania State University

CLINICAL EXPERIENCE

Sunny Hill Hospital for Children February 1990 - present
Department of Psychology
Vancouver, British Columbia

Staff Psychologist. Currently working on the Child Development Diagnostic Program, Neuromotor Program, and Brain Injury Program. Responsibilities include psychological evaluations of children and adolescents, many of whom are severely involved physically, and making corresponding recommendations to families, schools, and other professionals. Additional responsibilities include brief therapy for brain injury inpatients and their families, development and implementation of behavioral programs, and consultation to hospital professionals.

The Children's Hospital September 1988 - September 1989
Department of Psychiatry and Behavioral Sciences
Denver, Colorado

Psychology Intern. APA approved clinical psychology internship. Assessment and treatment of children, adolescents, and families. Emphasis on psychodynamic individual therapy and structural family therapy. Screenings, diagnostic testing, individual and family therapy, co-therapy of an outpatient eating disorders group, co-therapy of an inpatient early latency age play therapy group, hospital and community consultation. Training in the Outpatient Psychiatry Clinic, Inpatient Child Psychiatric Units, Psychiatric Consultation and Liaison Service, and Child Development Unit (inter-disciplinary evaluations of multiply handicapped children and adolescents). Participation in conferences and training seminars.

Saint Albans Psychiatric Associates 1987 - 1988
Roanoke, Virginia

Psychology Trainee. Responsibilities included conducting cognitive-behavioral assessment and treatment of children, adolescents, and families presenting to the outpatient clinic of a psychiatric hospital. Learning disabilities, depression and suicidal ideation, conduct disorder, borderline personality, panic disorder, and family difficulties

were typical presenting complaints. Psychological assessment of eating disorder patients.

Psychological Services Center
Blacksburg, Virginia

1984 - 1988

Clinical Practicum. Responsibilities included cognitive-behavioral assessment and treatment of Blacksburg area outpatients and (in 1987-1988) supervision of first-year clinical graduate students. Clients included children and adults, with a variety of presenting problems including depression, shoplifting, agoraphobia, sexual dysfunction, and family/marital conflicts. Consultation with public school teachers.

Hollins College
Roanoke, Virginia

1986 - 1987

Clinical Practicum (externship). Responsibilities included conducting cognitive-behavioral assessment and treatment of college women presenting for individual psychotherapy, as well as the preparation and presentation of workshops. A wide variety of presenting complaints including eating disorders, depression, anxiety, social skill deficits and relationship problems were seen. Workshops included sexual awareness, eating disorders, and long-distance relationships.

Childhood Anxiety Clinic
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

1984 - 1985

Responsibilities included assessment of children's anxieties, individual child therapy (behavioral and cognitive components), and development and implementation of behavioral programs.

Pennsylvania Association for Retarded Citizens
State College, Pennsylvania

1982-1984

Residential program for severely/profoundly retarded children (ages 10-18). Responsibilities included design and implementation of behavioral programs designed to promote self-care and reduce self-abuse, training of new staff members, presentation of case reports to program directors. Consultation with public school teachers regarding

educational and behavioral programs in the classroom,
and with physicians regarding medications.

RESEARCH EXPERIENCE

Doctoral Dissertation 1990
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

Investigation of psychological characteristics
related to the development of bulimia in early and
late adolescent females.

Chairperson: Thomas H. Ollendick, Ph.D.

Master's Thesis 1986
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

Investigation of the relationship between androgyny,
self esteem, and middle school students' classroom
behavior using behavioral and self-report measures
in a classroom setting.

Chairperson: Cynthia G. Baum, Ph.D.

Graduate Research Assistant 1984 - 1985
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

Effectiveness of cognitive versus behavioral
treatment of children's fears and phobias. Responsible
for assessment and implementation of cognitive-
behavioral treatment program involving both parents and
children.

Graduate Research Assistant 1984 - 1985
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

Assessment of group versus individual training in
children's learning of fire safety skills, and the role of
general and specific knowledge in maintenance of those
skills. Responsible for supervision of undergraduate
research assistants and data collection.

OTHER RESEARCH ACTIVITY

Pennsylvania State University 1983 - 1984
 State College, Pennsylvania

Investigation of the effects of clothing and dyad sex composition on men's and women's perceptions of sexual intent. Responsible for development of the data collection procedure, scoring, and analysis.

TEACHING EXPERIENCE

Proseminar in Clinical Psychology 1987 - 1988
 Virginia Polytechnic Institute and State University
 Blacksburg, Virginia

A year-long course for first year graduate students (ten students). Responsible for demonstration of interviewing techniques and provision of feedback regarding students' performance in role-play situations and actual interviews. Also responsible for supervision of administration, scoring, and interpretation of cognitive and projective tests. (3 quarters).

Graduate Teaching Assistant 1984 - 1987
 Virginia Polytechnic Institute and State University
 Blacksburg, Virginia

Teaching assistant for Introductory Psychology, Psychology of Learning, and Personality Psychology. Responsibilities included lecturing, classroom demonstrations, test construction, and grading exams.

PROFESSIONAL PUBLICATIONS

Abbey, A., Cozzarelli, C., McLaughlin, K.A., and Harnish, R.J. (1987). The effects of clothing and dyad sex composition on perceptions of sexual intent: Do women and men evaluate the cues differently? Journal of Applied Social Psychology, 17 (2), 108-126.

Jones, R.T., McLaughlin, K.A., and Williams, C. (1989). Group training of fire emergency skills: The role of general versus specific knowledge. Behavior Therapy.

PROFESSIONAL PRESENTATIONS

Jones, R.T., McLaughlin, K.A., & Williams, C.E. (1985).

Group training of fire emergency skills: The role of general versus specific knowledge. Paper presented at meeting of the Association for the Advancement of Behavior Therapy.

McLaughlin, K.A. & Baum, C.G. (1986). Androgyny, self-esteem, and classroom performance in early adolescence. Paper presented at meeting of the Southeastern Psychological Association.

McLaughlin, K.A. & Baum, C.G. (1987). Peer perceptions of gender stereotyped behavior in young adolescents: Relationship to gender and androgyny status. Paper presented at the meeting of the Southeastern Psychological Association.

McLaughlin, K.A., Boxer, H.E., & Tannenbaum, D.S. (1989). Perceptions of adolescent psychiatric inpatients regarding the efficacy of group psychotherapy. Paper presented at the Child Psychiatry Grand Rounds at The University of Colorado Health Sciences Center.

Kimberly McLaughlin