

2002


A school psychologist's role in decreasing eating disorder prevalence in school-aged children

Natalie Muth
University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©2002 Natalie Muth

Follow this and additional works at: <https://scholarworks.uni.edu/grp>

 Part of the [Counseling Commons](#), [Education Commons](#), [Health Psychology Commons](#), and the [Mental Disorders Commons](#)

Recommended Citation

Muth, Natalie, "A school psychologist's role in decreasing eating disorder prevalence in school-aged children" (2002). *Graduate Research Papers*. 1237.

<https://scholarworks.uni.edu/grp/1237>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

A school psychologist's role in decreasing eating disorder prevalence in school-aged children

Abstract

Eating disorders have dramatically increased over the last 20 years, resulting in prevalence rates exceeding other high-incidence medical conditions treated in the educational setting. Chapter 2 presents a review of literature covering eating disorder identification, history, prevalence and epidemiological data. Theoretical perspectives, risk and protective factors, symptoms, and medical complications are also reviewed. Current assessment measures used for screening and diagnosing anorexia and bulimia is additionally presented along with a summary of school-based primary prevention programs. The second chapter concludes with a brief overview of eating disorder treatment.

A summary is presented in chapter 3 along with implications for school psychologists. Suggestions for school psychologists include utilizing education, valid assessment procedures, and primary prevention programs at the elementary and secondary educational levels.

A SCHOOL PSYCHOLOGIST'S ROLE IN DECREASING EATING DISORDER
PREVALENCE IN SCHOOL-AGED CHILDREN

A Research Paper
in Partial Fulfillment
of the Requirements of the Degree
Masters of Arts

Natalie Muth
University of Northern Iowa
June 2002

This Research Paper by: Natalie J. Muth

Entitled: A School Psychologist's Role in Preventing Eating Disorder Prevalence in
School-Aged Children

Has been approved as meeting the
research paper requirement for the Degree of

Master of Arts in Education: Educational Psychology

Dr. Barry Wilson, Direction of Research Paper

Dr. Donald Schmits, Director of Research Paper

Dr. Barry Wilson, Faculty Advisor

Dr. Barry Wilson, Head, Department of Educational
Psychology & Foundations

June 13, 2002

Date Approved

Abstract

Eating disorders have dramatically increased over the last 20 years, resulting in prevalence rates exceeding other high-incidence medical conditions treated in the educational setting. Chapter 2 presents a review of literature covering eating disorder identification, history, prevalence and epidemiological data. Theoretical perspectives, risk and protective factors, symptoms, and medical complications are also reviewed. Current assessment measures used for screening and diagnosing anorexia and bulimia is additionally presented along with a summary of school-based primary prevention programs. The second chapter concludes with a brief overview of eating disorder treatment. A summary is presented in chapter 3 along with implications for school psychologists. Suggestions for school psychologists include utilizing education, valid assessment procedures, and primary prevention programs at the elementary and secondary educational levels.

Table of Contents

CHAPTER 1: INTRODUCTION AND ORGANIZATION.....	1
Introduction.....	1
Statement of Problem.....	2
Significance of Problem.....	2
Organization of Paper.....	3
CHAPTER 2: REVIEW OF LITERATURE.....	4
Definition of Eating Disorders.....	4
Historical Background.....	6
Prevalence Data.....	7
Epidemiological Data.....	8
Males verses Females.....	8
Cross Cultural Comparisons.....	9
Age of Onset.....	10
Theoretical Perspectives: The Biopsychosocial Model.....	10
Biological Features.....	10
Psychological Features.....	12
Sexual abuse.....	12
Developmental issues.....	13
Personality features.....	14
Social Features.....	14
Family systems.....	14

Society.....	17
Risk and Protective Factors Associated with Eating Disorder.....	17
Risk Factors.....	18
Protective Factors.....	19
Symptoms of Eating Disorders.....	21
Anorexia Nervosa.....	21
Bulimia Nervosa.....	22
Medical Complications Associated with Eating Disorders.....	23
Assessment of Eating Disorders.....	24
Adult Questionnaires Used in the Child and Adolescent Populations.....	25
The Eating Attitudes Test (EAT).....	25
The Eating Disorder Inventory (EDI).....	26
The Questionnaire of Eating Disorder Diagnoses (Q-EDD).....	27
The Setting Conditions for Anorexia Nervosa Scale (SCANS)....	28
The Body Shape Questionnaire (BSQ).....	28
The Body Satisfaction Scale (BSS).....	29
Measures Specifically Designed for Children and Adolescent.....	30
The Children's Eating Attitude Test (ChEAT).....	30
The Kids Eating Disorder Survey (KEDS).....	30
Interview Measures.....	31
Family Assessment.....	32
Review of School Primary Prevention Programs.....	32

Treatment.....	38
Behavioral Treatment.....	39
Cognitive-Behavioral Treatment.....	40
Interpersonal Therapy.....	41
Family Therapy.....	42
Hospitalization and Medication.....	42
CHAPTER 3: SUMMARY/CONCLUSION.....	43
Summary.....	43
Implications for School Psychologists.....	44
REFERENCES.....	47

CHAPTER 1: INTRODUCTION

Introduction

American culture increasingly places a premium on physical attractiveness and thinness. For the past 3 decades media standards of ideal shape have shifted considerably (Dyer & Tiggerman, 1999). Looking at body measurement statistics of *Playboy* centerfolds and beauty pageant contestants over the last 25 years reveals a slight increase in the heights of the women but a dramatic decrease in weight. Over the same period of time, articles on new and exciting diets have appeared in women's magazines. Most people living in developed nations receive a constant stream of impressions from television commercials which use young, attractive, and very thin women to advertise products such as soft drinks, security investments, cars, computers, fast foods, etc.

Media messages stress how desirable it is for women to be attractive and slender. The messages particularly influence teenage females at a period when they are seeking to gain independence, compete with peers, and to define their identity (Gordon, 2000). Body image plays a significant role in how individuals choose to identify themselves. Achieving the ideal body image is thought to ensure success and happiness. It is during this particular period young women are at risk to develop an eating disorder.

The term eating disorder encompasses several disorders involving manipulation of food (Berg, 1997). The disorders result in severe disturbances in eating behaviors and maladaptive efforts to control body weight. Among these are anorexia nervosa, bulimia nervosa, and binge-eating disorder. Although each of these disorders affects a significant number of adolescents, anorexia and bulimia constitute the primary focuses of this paper.

Statement of Problem

Over the last 2 decades, school personnel have tended to avoid the psychoeducational concerns identified in those at-risk or suffering from eating disorders (Haslam & Valletutti, 1996). Such avoidance has been largely related to beliefs that eating disorders are medical disabilities distinct from psychoeducational concerns. Eating disorders have serious psychological and social-emotional consequences affecting the educational and social growth of involved individuals. Anorexia nervosa and bulimia nervosa constitute a natural area of concern for school psychologists because onset is most often in the adolescent and young-adult years. Professionals are in an ideal position to establish preventive programs, identify individuals who have the disorders, and assist with treatment programs. This paper will review relevant literature on eating disorders including definitions, prevalence, risk factors, assessment, treatment and school prevention programs.

Significance of Problem

Anorexia and bulimia together constitute a major health concern. Within the last 30 years, incidents of anorexic and bulimic behaviors have been reported at increasing rates (Levine & Smolak, 2001). The National Association of Eating Disorders estimates that as many as 20 percent of girls and young women between the ages of 12 and 30 have a clinical eating disorder. Concern regarding anorexia nervosa and bulimia nervosa is warranted since these disorders can have a drastic impact on the quality and direction of an individual's life. Mortality estimates of individuals with anorexia nervosa range from 4 to 25%. Studies on bulimia suggest mortality rates are lower, but more research is

needed to better approximate how many individuals actually die from this disorder (Thompson & Smolak, 2001).

Research on current assessment tools and prevention models for anorexia and bulimia has been somewhat limited. According to Netemeyer and Williamson, (2001) effective assessment and treatment of eating disturbances in children and adolescents is restricted by the amount of information currently available. These two authors report that much is know about eating disorders in older adolescents and young adults. However, it is unclear whether such knowledge can be extended to individuals who experience eating disturbances at younger ages. Thus, assessment tools targeting at risk children are highly recommended. In addition, prevention research should be directed toward using assessment instruments to identify individuals with early signs of eating disorders and develop prevention programs.

Organization of Paper

Chapter 2 will address the definition, history, prevalence and epidemiology of these disorders. Theoretical perspectives, risk and protective factors, most common symptoms and medical complications associated with anorexia and bulimia is also discussed. Current assessment measures used to screen and diagnose an eating disorder and research on primary prevention programs to reduce the prevalence of eating disorders is additionally presented. Chapter 2 concludes with a summary of the most common methods used to treat eating disorders. Chapter 3 summarizes the major findings of chapter 2 and offers implications for school psychologists to better assess and prevent an eating disorder.

CHAPTER 2: REVIEW OF THE LITERATURE

Definitions of Eating Disorders

Most authorities use the Diagnostic Statistical Manual of Mental Disorders (DSM) to define eating disorders (American Psychological Association, 1994). In addition, practicing clinicians use DSM criteria to diagnose anorexia or bulimia. The DSM is continuously being revised with the latest update made in 1994. The current diagnostic manual is entitled the Diagnostic Statistical Manual of Mental Disorders IV (DSM-IV).

The DSM-IV defines anorexia as an eating disorder in which individuals (a) refuse to maintain at least 85% body weight over a minimal normal weight for age and height, (b) express intense fear of gaining weight or becoming fat, even though they are underweight, (c) demonstrate disturbance in the way in which one's body weight, size or shape is experienced (e.g. the person claims to "feel fat" even when emaciated), and (d) experiences absence of at least 3 consecutive menstrual cycles when otherwise expected to occur.

The DSM-IV recognizes two types of anorexia: restricting type and the binge/purge type. People with the *restricting type* of anorexia simply refuse to eat as a way of preventing weight gain. The other type of anorexia is the *binge/purge type*. This label is used when people periodically engage in bingeing or purging behaviors but also meet the DSM-IV criteria for anorexia.

Bulimia nervosa is defined in the DSM-IV as a disorder in which individuals (a) experience recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time), (b) feel a lack of control over eating behavior during

the eating binges, (c) regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain, (d) experience a minimum average of two binge eating episodes a week for at least three months, and (e) demonstrates persistent over concern with body shape and weight.

The DSM-IV also recognizes 2 subcategories for bulimia nervosa: purging type and non-purging type. People who use self-induced vomiting or purging medications are said to have a *purging type* of bulimia. People who use excessive exercise or fasting to control their weight but do not engage in purging are said to have a *non-purging* type of bulimia.

A dual diagnosis of anorexia and bulimia can be given for those patients who meet criteria for both disorders (APA, 1994). For patients who have problems related to appetite, eating and weight, but who do not meet the criteria for anorexia or bulimia can be diagnosed with *Eating Disorder Not Otherwise Specified (NOS)*. Following are examples where the diagnosis of eating disorder NOS may be applicable: when an individual (a) exhibits an intense fear of being fat, is 15% below normal weight, yet experiences a normal menstrual cycle, (b) fears weight gain, believes they are fat but are within normal weight for their age and height, (c) meets all criteria for bulimia but binges less than two times a week, (d) chews large quantities of food, but before swallowing spits the food out, and (e) repeatedly vomits or engages in other inappropriate weight control behavior after eating small amounts of food, but weight remains normal (Morrison, 2001; APA, 1994; & Kerwin & Berkowitz, 1996). These conditions are only examples and not limited instances in which an Eating Disorder NOS diagnosis can be issued.

Historical Background

There are accounts of self-induced starvation dating from as early as the Middle Ages (Stober, 1986). For example, a nun in Leichester, England, apparently ingested nothing but the wine and wafers of the Eucharist for 7 years. The earliest comprehensive description of a syndrome that most resembles anorexia is credited to Richard Morton in 1694. He described women patients with decreased appetite, amenorrhea, and food aversions. In the latter part of the nineteenth century, Sir William Gull and Charles Lasegue published accounts of anorexic patients, bringing the condition to the widespread attention of the European medical establishment. In 1874, Gull coined the term *anorexia nervosa* for this condition. Gull noted onset of the disorder was usually in adolescence and *anorexia nervosa* was much more likely seen in females than in males. In his 1873 report on “*anorexia hysterique*,” Laseque noted girls with this disorder often (a) express morbid beliefs about food being dangerous, (b) are characterized by self-doubt and seek approval from others, and (c) seem driven to activity despite being terribly malnourished (Nolen-Hoeksema, 1998 & Palmer, 2000). The psychoanalyst Hilde Burch was most influential in the modern conceptualization of anorexia. In 30 years of clinical practice with anorexic patients, Burch came to see this disorder as caused by feelings of passivity, ineffectiveness, and lack of control, brought about by maladaptive family dynamics (Nolen-Hoeksema, 1998).

There are much fewer accounts on the historical development of bulimia than there are for anorexia. In more recent medical history, the existence of bulimia prior to the twentieth century is highly doubtful, and in the twentieth century it was not widely reported until the 1970s (Gordon, 1991). Between 1970 and 1980 the disorder emerged

in mass epidemic proportions. During this time, the appearance of bulimia was not unique to the United States. Various other sources indicated that a significant amount of patients were being diagnosed in England, France, and Germany. The emergence of bulimia appears to be linked with the growing emphasis society places on attractiveness.

Prevalence Data

According Kater, Rohwer, & Levine (2000), at least 2 million female Americans have a clinically relevant (i.e. diagnosable or sub threshold) eating disorder. This number suggests that approximately 3% of American females are diagnosed as either anorexic, bulimic, or eating disorder NOS.

Historically, anorexia has been considered a rare disorder. In the last few decades, numbers of individuals diagnosed as anorexic has increased dramatically (Henderson & Chaplin, 1998). A widely cited study by Crisp, Palmer & Kelucy (1976) surveyed 9 samples of British schoolgirls. Results indicated that 1 in 100 students (ages 16-18) in private school became severely anorexic. Among the same age group in public education the incidence was 1 in every 300 students (Peters, Swassing, Butterfield, & McKay, 1984). Recent literature suggests the best estimates of anorexia nervosa is likely to be between 4 and 10 per 1,000 total population per year (Palmer, 2000). Surveys concentrating on younger females (ages 12-18) suggest prevalence is between 2 and 8 per 1,000 (Doyle & Bryant-Waugh, 2000).

The best incidence estimates of bulimia range between 10-15 per 1,000 per year (Hoek, 1993). Palmer (2000) indicated a majority of individuals do not seek help for their binge-purge cycles and are not counted when estimating prevalence. Thus the actual prevalence of bulimia is likely to be much higher. Among middle and high school

populations the rate of bulimia has been documented from anywhere between 6 and 10% (Levine, 1987). A study conducted by VanThorre and Vogel (1985) discovered 20.1% of 14 year olds, 12.5% of 15 year olds, 19% of 16 year olds, and 13.8% of 17 year olds have symptoms severe enough to constitute a diagnosis of bulimia nervosa.

Cautions need to be considered when analyzing the prevalence data of these two disorders. First of all, specific studies like the one conducted by VanThorre and Vogel in 1985 involved very specific populations, which may be naturally more susceptible to the development of an eating disorder. Secondly, bulimia can be very hard to diagnose because most individuals with this disorder are not underweight and physically appear healthy (Levine, 1987; Satter, 1987). Thirdly, confusion amongst diagnostic criteria could create either under or over diagnosis of the disorder depending on who is investigating the individual exhibiting eating disorder symptoms (Kerwin & Berkowitz, 1996; Levine, 1987). It is these methodological differences across studies, which seem to account for the varying rates of incident reports (Doyle & Bryant-Waugh, 2000).

Epidemiological Data

Males Verses Females

Most victims of eating disorders are white females in late adolescent or young adulthood (Henderson & Chaplin, 1998). Most clinical series report a ratio of least ten females to each male. However, more current research is beginning to suggest bias in accurately defining just who has an eating disorder (Doyle & Bryant-Waugh, 2000).

Although numerous studies have shown eating disorders are more common in females, there are age-related contrasts. The number of boys relative to girls is higher than might be expected on the basis of comparison with older patients. For example in

1985, Hawley described a follow-up study of 21 children with anorexia nervosa in a relatively high percentage of boys (19%). Jacobs and Isaacs (1996) reported a gender ratio of 6:14 (male: female) in a group of pre-pubertal children with anorexia nervosa in comparison to a ratio of 1:19 in a group of post-pubertal children. In Fosson, Knibbs, Bryant-Waugh, and Lask's study (1987) of early onset anorexia nervosa, 13 out of 48 (27%) were boys. Two years later, Higgs, Goodyer, and Birch (1989) published a study of anorexia nervosa and related eating disorders. Thirty percent of their population was boys. Although there is more evidence that boys suffer from eating disorders than previously thought, the majority of those identified are still adolescent, teenaged girls (Hoek, 1993).

Cross Cultural Comparisons

Most clinical accounts and research concerning anorexia nervosa and bulimia nervosa come from Europe, North American and Australia (Haslam & Valletutti, 1996). These parts of the world are described as "western" or "developed." Until recently, eating disorders were thought of as culture-bound syndromes predominantly occurring in Caucasians from Westernized cultures. However, there are a number of epidemiological studies and case reports that refute this view. Over the last decade an increasing number of reports have appeared in the literature describing the development of eating disorders among non-Caucasians. Crago, Shisslak, and Estes (1996) conducted a review of minority students with eating disorders in America. They reported in general eating disturbances were less frequent among black women and girls in comparison to Caucasians. Eating disturbances were found to be equally as common in Americans of Hispanic origin and less common in groups described as Asian American.

Age of Onset

The typical age of onset for anorexia nervosa is in the mid to late teenage years. In most clinical settings the presentation is two or three years later (Berg, 1997). Although, cases have been reported in children as young as 8, the general consensus is that anorexia nervosa does not usually occur before the onset of puberty. Bulimia nervosa is rare before the age of 14. Typical age of onset is between mid teenage and early twenties.

Theoretical Perspectives: The Biopsychosocial Model

Most recent theorists adopt a biopsychosocial model to theoretically explain how an eating disorder develops. According to Schlundt & Johnson (1990) behavior results from the interaction between the organism, its past behavior, and the environment. The biopsychosocial model states understanding anorexia and bulimia require taking into account how biological, psychological, and environmental variables interact to produce specific symptoms and complications.

Biological Features

A number of studies on anorexia and bulimia support that genetic variation does indeed predict risk (Schlundt & Johnson, 1990). Family studies have shown a fairly consistent excess of cases of anorexia nervosa in first-degree relatives of people with the disorder. Evidence indicates increased risk in families is genetically transmitted by the results of twin studies (Lask, 2000). Such studies compare the rate of concordance in monozygotic twins with dizygotic twins. If the first significantly exceeds the second then it is strongly suggested that wholly shared genetic make-up of the monozygotic twins is playing a detectable role. The evidence is fairly consistent in favor of genetically

inherited risk for anorexia nervosa. There is also some evidence with regard to bulimia nervosa and indeed for some shared risk between the two disorders.

New genetic methods, which detect gene variation, are beginning to study eating disorders (Woodside, 1993). Hopes for the future include that genes may be identified which play a role in early identification of anorexia and/or bulimia.

Much of the current research on biological causes of anorexia and bulimia focuses on the systems in the body that regulate appetite, hunger, satiety, initiation of eating and cessation of eating (Blundell & Hill, 1993). The hypothalamus plays a central role in regulating food intake. It receives messages about the body's recent food consumption and nutrient levels and sends messages to cease eating when the body's nutritional needs are met. These messages are carried by a variety of neurotransmitters, including norepinephrine, serotonin, and dopamine, and a number of hormones such as cortisol and insulin. Distorted eating behavior might be caused by imbalances or deregulation with the neurochemicals involved in these systems or by functional problems in the hypothalamus.

There are pieces of evidence that people with eating disorders have disruptions in the hypothalamus (Fava, Copland, Schweiger, & Herzog, 1998). Individuals with an eating disorder show lowered functioning of the hypothalamus and abnormalities in regulation levels of several different hormones. However, it is unclear whether these are causes or consequences of self-starvation. Some studies find that people with anorexia continue to show abnormalities in hypothalamic and hormonal functioning and in neurotransmitter levels after they gained weight, whereas other studies show these abnormalities disappear with weight gain.

Many persons with bulimia show abnormally low levels of the neurotransmitter serotonin (Mitchell & deZwaan, 1993). Wurtman (1987) has suggested that this serotonin deficiency causes the body to crave carbohydrates. Indeed, bulimics often binge on high carbohydrate foods. An individual with bulimia may then self-induce vomiting or use other purging methods to avoid gaining weight from eating food high in carbohydrates. Some studies also find that individuals suffering from bulimia have lower than normal levels of norepinephrine (Fava et al., 1989). However, it is still not clear whether low levels of these neurotransmitters are causes of bingeing or consequences of disordered eating patterns.

Thus, a number of biological abnormalities are associated with anorexia and bulimia (Nolen-Hoeksema, 1998). These abnormalities could contribute to disordered eating behavior by causing the body to crave certain food or by making it difficult for a person to read the body's signals of hunger and satiety. Just why people with eating disorders also develop distorted body images and other cognitive and emotional problems evident in eating disorders is unclear. In addition, many of the biological abnormalities associated with eating disorders could be the consequences rather than the causes of the disorders.

Psychological Features

Sexual abuse. There are a number of psychological factors, which contribute to the development of an eating disorder. One theory claims eating disorders often result from experiences of sexual abuse (Pope & Hudson, 1992). This theory is controversial because it stems from clinical reports of high rates of sexual abuse among persons seeking therapy for eating disorders rather than from controlled studies. It has led some

therapists to urge their clients with eating disorders to retrieve past memories of childhood sexual abuse. Proponents of this theory argue survivors of sexual abuse develop eating disorders as a symbol of self-loathing in attempts to make themselves unattractive to prevent further sexual abuse.

In recent years, several careful studies have been conducted to examine the rates of sexual abuse among women and men with eating disorders (Kinzl, Traweger, Guenther, & Bieble, 1994; Pope & Hudson, 1992; Welch & Fairburn, 1994). These studies have found that people with eating disorders have experienced as many instances of childhood sexual abuse as people with other psychological disorders, such as depression or anxiety. Thus, sexual abuse seems to be a general risk factor for psychological problems, including eating disorders, depression, and anxiety, rather than a specific condition for precipitating eating disorders.

Developmental issues. Another psychological factor, which may perpetuate an eating disorder, is the separation and individuation from one's family (Palmer, 2000). Children from some families deeply fear separation because they have not developed the ability to act and think independently from their families. They also fear involvement with peers, especially sexual involvement, because they do not understand or trust their feelings and judgment. Yet they recognize the need to separate from their families and take their place among peers.

These individuals may harbor rage against their parents for over controlling them. They become angry, negativistic, defiant, and distrustful. They also discover that controlling food intake gives them some sense of control over their lives and elicits concern from others. Other psychoanalytic theorists have taken this argument further to

suggest that the anorexic girl is primarily avoiding sexual maturity and relationships by stopping pubertal maturation by self-starvation.

Personality features. People with restricting type of anorexia nervosa tend to show obsessive personality features and perfectionism, where people with bulimic disorders tend to be more emotionally reactive (Palmer, 2000). It is difficult to identify whether the personality features evident in a sufferer are truly features characteristic of that person prior to diagnoses. However, in many cases, persons with eating disorders do report that the traits of low self-esteem and perfectionism were present before the onset of the disorder. This is true of many clinical accounts and has also been confirmed by systematic research.

Social Features

Family systems. Stober (1986) reviewed the literature on family contributions to the etiology of anorexia and bulimia. The descriptive data suggest that maladaptive communication patterns and high levels of psychological distress exist within the family dynamics of patients identified with an eating disorder. These authors suggested issues of autonomy and control were readily observable in the interpersonal behavior of family members. However, the extent to which these patterns are causes of weight concerns, dieting, and binge eating as opposed to consequences remains unknown.

A pioneer in psychosocial theorizing about eating disorders is Hilde Bruch (1983). Her theory is most concerned with girls who develop anorexia nervosa, although it has also been used to understand the development of bulimia. Bruch noted anorexia often occurs in females who have been unusually “good girls,” high achievers, dutiful and compliant daughters who are always trying to please their parents and others by

being “perfect.” These girls tend to have parents who are over invested in their daughters, over controlling, and unwilling to allow the expression of feelings. Another pioneer in theorizing about anorexia, Salvador Minuchin, describes the families of anorexics as *enmeshed* (Nolen-Hoeksema, 1998). There is extreme interdependence and intensity in the family interactions, so that the boundaries between the identities of individual family members are weak and easily crossed.

According to systematic research, the theories of Bruch and Minuchin are largely unsupported (Schlundt & Johnson, 1990). Furthermore, such theories have sometimes led to regrettable attribution of blame, which tend to hinder rather than help any therapeutic endeavor. The evidence about current family life of those with an eating disorder suggests a wide variety of behavior rather than one or two consistent patterns. However, there is some evidence that individuals identified with an eating disorder remember their childhood as characterized by a variety of negative features. The following are cited as the main negative features:

1. The person with an eating disorder has acquired fear of obesity from family interactions. For example, a mother who is afraid of getting fat and who diets constantly may teach this fear to her child. Comments and criticisms from parents, siblings, and other family members may help establish or reinforce a fear of obesity.
2. The family is the context in which an individual acquires appropriate or inappropriate eating habits. Someone who is raised in a family where overeating is common or where snacks are frequently substituted for meals may develop similar eating habits. It may be that dieting is learned within the family and that some of the behaviors individual with eating disorders use to restrict food intake were initially learned from

the mother or father. Purging techniques may also be learned within the family. In a survey of 499 bulimics, 27% reported learning to purge from family members.

3. Bulimic behavior may be elicited and maintained by family interaction patterns. For example, a father's attempt to control his daughter's behavior may be met with refusal to eat as a coping response. The individual may be using the anorexia or bulimia as a way to fight back against the parent's efforts at control. The subsequent attempts of family members to get a child to eat may serve to further elicit food refusal and restrictive dieting.
4. Family interaction patterns may create situations that elicit bulimic behavior. For example, if the entire family is very busy, a situation may be created in which eating in restaurants is a common occurrence that exposes the individual with an eating disorder to many forbidden foods. Likewise, the kinds and amounts of food that are stored in the house create a physical environment that may make restrictive dieting difficult and lead to bingeing.
5. Family interaction patterns, such as enmeshment or disengagement, create stress that serves as an antecedent to binge-purge behavior. Conflict with parents or siblings may create stress and negative emotions that are responded to with eating.

Recent research notes that the general force of such family risk factors seems to be especially great for bulimia nervosa (Steinberg & Phares, 2001). A large twin study used multivariate analyses to try to tease out the likely influence of genetic and shared familial and non-shared environmental factors in bulimia nervosa and five other psychiatric disorders. Alone amongst the six disorders studied, the model for bulimia nervosa suggested a significant etiological role for familial environmental factors. Some

studies suggest fewer overall problems in the childhood background of anorexia nervosa sufferers.

Society. The prevalence of eating disorders appears to have increased in the United States and Europe over the last few decades (Strober, 1986). In contrast, eating disorders are uncommon in many less developed countries. Psychologists have linked the historical and cross-cultural differences in the prevalence of eating disorders to variations in the standards of beauty for women held at different historical times across cultures. When the most wealthy and influential members of society value thinness, eating disorders tend to be more rampant. When a heavier weight is seen as more beautiful, eating disorders are less common, but obesity is more common. The ideal shape for women in the United States and Europe has become thinner and thinner over the last few decades. Some writers attribute this to the influence of the weight control industry and to the media. In contrast, people in less-developed countries may view heaviness as beautiful because only wealthy people have the means to obtain food and become obese (Gordon, 2000; Doyle & Bryant-Waugh, 2000).

Risk Factors and Protective Factors Associated with Eating Disorders

The purpose of this portion is to provide an overview of the research that has been done on risk and protective factors for eating disorders in children and adolescents and draw inferences from this research that can be applied to the treatment and prevention of anorexia and bulimia. It is beyond the scope of this section to provide a detailed critique of each individual study. It is important to note that although there may be overlap between precipitating factors identified in this section and factors mentioned in Theoretical Perspectives: The Biopsychosocial Model, this section is research based on

specific conditions rather than on theoretical perspectives derived from theorizing about the development of an eating disorder.

Risk Factors

According to Shisslak & Crago, (2001) risk factors can be referred to “antecedent conditions associated with an increase in the likelihood of adverse, deleterious, or undesirable outcomes” (p. 103). The following studies summarize the previous research, which has focused on identifying the risk factors associated with eating disorders.

Horesh, Apter, Lepkifker, Ratzoni, Weizmann, & Tyano (1995) compared the life events of 21 adolescent anorexic inpatients with 79 adolescent psychiatric inpatients and 40 healthy adolescents. Based on a semi-structured interview regarding the occurrence of 18 life events, only physical or emotional abuse by parents distinguished between the two patient groups.

Gowers, Norton, Halek & Crisp (1996) compared the rate of negative life events in a group of 35 anorexic patients, 35 psychiatric control patients and 35 community control research participants. The authors found that the anorexic patients reported rates of extreme negative events at an intermediate level between the community control group and the psychiatric control group. The most frequently reported negative events were death of a family member or friend, loss of a friendship, illness in the family, change of school, and departure of a family member.

In a study by Fairburn, Welch, Bolt, Davies & O'Connor (1997), exposure to a number of risk factors for eating disorders was compared in a group of 102 bulimic research participants. When compared to the control participants, the individuals with bulimia reported significantly greater levels of exposure to 29 of the 58 risk factors being

assessed. Such factors included negative self-evaluation, childhood obesity, parental high expectations, and critical comments by family about weight, shape or eating.

The research provides a variety of risk factor models for eating disorders. Such models include multiple risk factors for eating disorders which can be divided into three general categories: individual (biological, behavioral, personality), family, and sociocultural (Shisslak & Crago, 2001). Risk factors of an individual nature include: low self-esteem, perfectionism, body dissatisfaction, inadequate coping skills, weight concerns, impulsivity, being overweight, early maturation, dieting, affective deregulation, and initiation of dating. Family risk factors have included parental obesity, parental neglect, parental overprotection, family conflict, parental loss or absence, eating disorders in other family members, family concerns regarding weight, and parental psychopathology. Sociocultural risk factors include importance of appearance for success in women, thin beauty ideals for women, gender role conflict, teasing about weight or shape, media influences, weight concerns or eating disorders among friends, and physical or sexual abuse.

Protective Factors

In contrast to risk factors for eating disorders, relatively little is known or has been written about protective factors that may increase resistance to anorexia and bulimia (Shisslak & Crago, 1997). Protective factors are referred to “antecedent conditions associated with a decrease in the likelihood of undesirable outcomes or an increase in the likelihood of positive outcomes” (p. 377).

In one of the few studies identifying protective factors for eating disorders, Wertheim, Paxton, Schutz, and Muir (1997) interviewed 30 high school girls and

identified several factors that appeared to protect girls from excessive weight concerns leading to the development of anorexia and/or bulimia. These factors were self-acceptance, family acceptance, positive peer influences, and knowledge about the dangers of dieting. Although this study has several limitations (small sample size, qualitative data) it represents a beginning to investigating effects of protective factors on the development of eating disorders.

Among the individual protective factors that have been proposed are (a) being self-directed and assertive, (b) successful performance of multiple roles (e.g. education, career, family, personal interests), (c) coping well in stressful situations, (d) high self-esteem, and (e) genetic predisposition of be slender (Thompson & Smolak, 2001).

Family protective factors suggested are (a) being a member of a family in which there is not an overemphasis on weight and attractiveness, and (b) close, but not too close, relationships with parents. Protective factors of a sociocultural nature proposed include: (a) social acceptance of a diverse range of body shapes and sizes, (b) participation in sports that encourage appreciation of the body for its performance more than just its attractiveness, (c) close relationships with friends or romantic partners who are relatively unconcerned with weight, and (d) social support.

In general, results of these studies suggest eating disorder patients are more likely to have experienced the following characteristics before onset: (a) greater parental pressure, high expectation or abuse, (b) more health problems, (c) childhood obesity, (d) more familial criticism about their weight, shape, or eating habits, and (e) a more negative self-evaluation (Thompson & Smolak, 2001).

Symptoms of Eating Disorders

Anorexia Nervosa

Characteristics identified among those with anorexia usually result from this individual's determination to become thinner and thinner (Abraham & Llewellyn-Jones, 1992). Such determination is usually related to an intense fear of becoming fat and distorted body image. The individual with anorexia becomes so obsessed with weight, shape becomes emancipated when the body no longer functions properly because of starvation efforts. Symptoms of starvation include: obsession with food and food preparation, usual eating and drinking habits, emotional disturbances, social withdrawal, binge eating and loss of menses.

A person with anorexia often thinks in dichotomous terms, either in or out of control (Ginannini, Newman, & Gold, 1991). Starvation represents an assertion of control. Control is important because the body and mind are not to be trusted. One particular symptom of anorexia nervosa is defined as "paradoxical satiety." Individuals who exhibit this particular symptom report no hunger when fasting and may feel satiated or bloated when not eating. It should be noted such a symptom becomes more prevalent in the later stages of anorexia nervosa and is usually a result of a physiological effect of prolonged starvation.

The behavior characteristics of individuals suffering from anorexia nervosa usually depict a hard working, over achieving perfectionist who soon becomes socially withdrawn (Ginannini et al., 1991). As the disorder develops the person with anorexia loses focus on things that used to be of great importance to them (school, family, friends). Instead their behavior shifts towards losing weight, counting calories, and exercising.

Dramatic weight loss will cause these individuals to become increasingly lethargic. In instances where diet pills and diuretics are being taken, the individual with anorexia may appear hyperactive, with abilities to maintain attention excessively limited.

The following are the most commonly cited physical symptoms of anorexia nervosa: (a) hair loss, (b) brittle nails, (c) thin coating of soft body hair, (d) weakness and (e) dry and yellowed skin (Abraham & Llewellyn-Jones, 1992; Ginannini et al., 1991; Palmer, 2000).

Bulimia Nervosa

The defining symptom of an individual with bulimia is the persistent attempts to rid food and/or liquids, which have usually been consumed in large amounts (Abraham, Llewellyn-Jones, 1992). At some point during this process, the victim starts to experience great anxiety reduction by ingesting large amounts of food. Like a drug, the food becomes a calming substance the individual can turn to when anxiety and painful feeling mount. Because of the over-concern with body image and great desires to be thin, the individual with bulimia feels a need to rid the food ingested during the binge and, in some instances, punish one's self for what may be considered, "bad" behavior. To accomplish this task, victims of bulimia turn to purging or excessive exercise, usually within 30 minutes to an hour after the binge. Putting fingers down the throat usually induces vomiting. For those who abuse laxative, an excessive number of over-the-counter laxatives are used to induce severe diarrhea after a binge.

Behavioral indices of bulimia may include stealing in order to buy food, eating large amounts of usually high fat, high carbohydrate foods, without much weight gain, and excusing one's self to the bathroom after eating (Berg, 1997). Individuals with

bulimia usually act impulsively and exhibit emotional instability. Acting out via substance abuse, self-mutilation, and/or promiscuity are common behaviors documented by those identified with bulimia. Because of the secretive and remorseful nature of the disorder, symptoms can exist for a long time before anyone recognizes the person may have an eating disorder. A great number of individuals are burdened with the illness for many years before ever telling another person. A person with bulimia may withdraw from friends and family because of terrible feeling about one's self. This group of individuals may never eat around others for fear of losing control or being discovered.

Abraham & Llewellyn-Jones (1992), Ginannini et al. (1991) & Palmer (2000).

identified the following as the most common physical symptoms of bulimia nervosa: (a) abdominal pain, heartburn, or stomach cramps, (b) dental and gum problems, (c) swollen glands beneath the jaw, (d) swelling or bloating, and (e) callus formation above knuckles over index fingers (due to chronic irritation of the skin by teeth as a consequence of frequent self-induced vomiting).

Medical Complications Associated With Eating Disorders

The medical complications of anorexia nervosa for the most part result from purging and malnutrition. Because of the seriousness of complications, approximately 12% of anorexia's victims die. The body reacts to starvation by slowing down to preserve calories for continued functioning of the heart and brain. Symptoms include a slower heart rate and lowered blood pressure. Reduced body fat leads to cessation of the menstrual cycle, lowered body temperature and an intolerance for cold. If the menstrual cycle remains inactive over an extended period of time, a bone disease called osteoporosis (loss of bone density) can occur. Also prolonged starvation and insufficient

nutrition can cause irregular heart beats, heart failure and cardiac arrest. The major medical complications of anorexia nervosa affect the brain, heart, circulatory system, blood, kidneys, stomach, intestines, and the body's overall metabolism.

The most common medical problems associated with bulimia are dental (Levine, 1987). Cavities, enamel erosion, and chronic throat irritation result from frequent vomiting. Abdominal pain, heartburn and/or stomach cramps are common complaints, usually associated with overeating or purging behavior. Often bulimics will have swollen glands at the angle of the jaw, a result of binge eating and purging. Swelling or bloating over the stomach or abdominal area and in the extremities (fingers and toes) is caused by the fluid imbalance created by purging.

Frequently menstrual irregularities are common and sometimes bulimics lose menstrual cycles altogether (Kaplan & Woodside, 1987). These menstrual problems are likely due to excessive exercise and/or low body fat content. Dryness of the skin or a fine rash can result when too much body fluid is eliminated. Sometimes scarring occurs over the knuckles, a result of chronic irritation by the teeth when fingers are forced down the throat to repeatedly induce vomiting. The most serious, life threatening consequences of bulimia are stomach rupture, kidney failure, heart failure, and cardiac arrest.

Assessment of Eating Disorders

Standardized methods are commonly used to help describe and diagnose eating disorders (Schlundt & Johnson, 1990). Within the adult population there is a wide choice of standardized methods for specifically assessing eating disorders. These fall broadly into two categories, self-report questionnaires and structured or semi-structured interviews. Most general psychopathology measures also have an eating disorders

section. In contrast, there are few similar measures for the child and adolescent populations. The general psychopathology measures may have eating disorder sections, (e.g. the Diagnostic Interview for Children and Adolescents), but it is often preferable to use a more detailed specific eating disorder assessment tool (Netemeyer & Williamson, 2001). This applies particularly when a more detailed profile of the child's eating pathology is required. Many of the specific eating disorder adult measures have been used with adolescents, but lack data for adolescent norms.

Adult Questionnaires Used Within the Child and Adolescent Population

The Eating Attitudes Test (EAT). The Eating Attitudes Test (EAT) is a self-report 40-item measure that employs a 6-point Likert rating scale (Netemeyer & Williamson, 2001). It was designed to measure attitudes and behaviors associated with anorexia nervosa and although not diagnostic, can be used to measure bulimic symptoms. Following factor analysis, a shorter 26-item version was developed. It was highly correlated with the original version ($r = 0.98$). The EAT is easy to administer and takes less than 10 minutes to complete. The measure has seven factors: food preoccupation, body image for thinness, vomiting and laxative abuse, dieting, slower eating, clandestine eating, and perceived social pressure to gain weight. The instrument proved to have high internal consistency for both an anorexia nervosa group (coefficient alpha = 0.79) and for a mixed group of anorexia nervosa and normal controls (coefficient alpha = 0.94) (Garner, Olmstead, & Polivy, 1982). The EAT also has high test-retest reliability ($n = 56, r = 0.84$).

The EAT has been found to differentiate between binge eaters and those with anorexia and nervosa (Williamson, 1990), and between normal controls and eating

disorder groups (Netemeyer & Williamson, 2001). However, the measure does not discriminate between those with anorexia and those with bulimia. The EAT has also proved sensitive to therapeutic changes and has been shown to be moderately correlated with the Bulimia Test and the Bulimic Investigatory Test ($r = 0.70$). This is the only questionnaire that has been specifically adapted for the use of children.

The Eating Disorder Inventory (EDI). The Eating Disorder Inventory (Garner et al., 1983) is a 64-item measure, consisting of eight subscales: three to assess attitudes and behaviors towards weight, body shape, and eating (Drive for Thinness, Bulimia, and Body Dissatisfaction) and five to assess psychological characteristics common to anorexia and bulimia nervosa (Ineffectiveness, Perfection, Interpersonal Distrust, Interceptive Awareness, and Maturity Fears). The measure has been revised, to create the Eating Disorder Inventory-2 (Netemeyer & Williamson, 2001), with the addition of 27 additional items, forming three subscales-Asceticism, Impulse Regulation, and Social Insecurity. Adolescent norms are available and the measure has been used in groups with an age range of 11-18 years. The EDI and EDI-2 are widely used as screening tools, and as measures of treatment outcome.

The EDI and EDI-2 are also used to detect subtypes of anorexia nervosa and bulimia nervosa as well as symptom severity. Garner et al. (1983) found that 88-93% of subjects were correctly classified using the EDI, and also found that 85% of subjects were correctly classified into bulimic and restrictor subtypes of anorexia nervosa using discriminate analysis, and comparing the self-report EDI with clinicians ratings of the subscales. The concurrent validity between the EDI and the EAT is reported as good, as scores on all the EDI subscales were positively correlated with scores on the EAT,

however no coefficients were reported in the literature (Netemeyer & Williamson, 2001). The Bulimia scale of the EDI is a stable predictor of binge eating at both one-year and two-year follow-ups, thus having high predictor validity. In a sample of 11-18 year olds reliability was also reported as “good” found for both the EDI and the EDI-2, but no coefficient was provided.

The Questionnaire for Eating Disorder Diagnoses (Q-EDD). The Questionnaire for Eating Disorder Diagnoses (Netemeyer & Williamson, 2001) uses a self-report questionnaire that takes approximately 10 minutes to complete, and comprises 50 questions. Participants complete the test either answering either yes or no, or using a Likert-type rating scale. Each question is linked directly to a DSM-IV criterion for eating disorder diagnosis, and has a decision rule to facilitate the scoring of the questionnaire. The Q-EDD was designed to operate according the DSM-IV criteria for eating disorders. It is a revision of the Weight Management Questionnaire based on DSM-III-R criteria for eating disorders, which was revised from Ousley’s DSM-III questionnaire.

The measure differentiates between those who meet diagnostic criteria for an eating disorder, and those that do not. Within the group who meet diagnostic criteria for eating disorders, it differentiates between individuals who meet the diagnostic criteria for anorexia nervosa and those who meet the diagnostic criteria for bulimia nervosa. Within the group that does not meet the diagnostic criteria for eating disorders, the measure differentiates between those who have some eating disorder symptomatology and those who are asymptomatic.

The measure has been used with a non-clinical sample of older adolescents (Mintz, O’Halloran, Mulholland, & Schneider, 1997). It has high test-retest reliability

and Interrater reliability on 50 randomly selected Q-EDD questions with 100% agreement produced ($r = .999$).

The Setting Conditions for Anorexia Nervosa Scale (SCANS). The Setting Conditions for Anorexia Nervosa Scale (Netemyer & Williamson, 2001) is a 40-item questionnaire that employs a five-point, Likert-type rating scale, and comprises five scales (dissatisfaction and loss of control, social and personal anxiety, perfectionism, and adolescent problems, and need for weight control). It was designed to identify those at risk of developing anorexia and bulimia, and has been used for this purpose in large samples of adolescents. The measure is quick and easy to use, and can be used with younger adolescents, as the reading level of the questionnaire is aimed at this age group. The measure takes between 10 and 20 minutes to complete and 10 minutes to score. Slade and Dewey (1986) found that the scales of the SCANS have a high internal consistency, with similar co-efficient alphas being found on all scales in two separate non-clinical samples (actual coefficients were not reported in the literature). The SCANS adequately differentiates between anorexia nervosa subjects and those with bulimia nervosa.

The Body Shape Questionnaire (BSQ). The BSQ instrument is a 34-item questionnaire with a six-point Likert-style rating scale, and was developed to measure body weight and shape concern in those with eating disorders or other body image related problems (Netemyer & Williamson, 2001). The measure takes about 10 minutes to complete, and may be a beneficial screening device for those at risk for developing eating disorders. However, body weight and shape concern are only one of the criterion items

in the diagnosis of eating disorders. Thus this instrument may be better suited for assessment of body weight and/or shape concerns in community samples.

Reliability on the BSQ shows was reported significant for each of the 34 items (Rosen, Jones, Ramirez, and Waxman, 1996). However, no coefficients were reported to depict the test's actual reliability. This measure has been widely used to examine body weight and shape dissatisfaction in adolescents from 12 years old usually in large school samples. In addition it has also been used to examine sociocultural differences in body weight and shape dissatisfaction in adolescents.

The Body Satisfaction Scale (BSS). This measurement is a 16-item self-report questionnaire that measures body dissatisfaction (Netemyer & Williamson, 2001). Each of 16 body parts is rated on a seven-point Likert-type scale, ranging from "very satisfied" to "very dissatisfied." This questionnaire has two subscales, assessing dissatisfaction with the head and dissatisfaction with the body. It is useful in making a quick assessment of body satisfaction. The instrument has high internal consistency (co-efficient alpha range 0.78-0.89), is well validated against other body satisfaction scales, and is highly correlated with The Body Shape Questionnaire.

This instrument only takes about 5 minutes to complete and 5 minutes to score. (Cok, 1990). Cok used the BSS in a large sample of children and adolescents aged 11-18 years old. Cok reported no difficulties in administration and recommended the instrument be used as a screening device.

Measures Specifically Designed for Children and Young Adolescents

The Children's Eating Attitudes Test (ChEAT). The ChEAT is a modified version of the Eating Attitudes Test (Netemyer & Williamson, 2001). This questionnaire asks

about dieting practices, preoccupations with food and perceived body image. Twenty-six questions are answered using a six-point Likert-type scale. The wording of the tests was changed to make the questions more comprehensible for children as young as eight. This measure is easy to administer with the instructions being orally delivered (test items can also be administered orally). Overall time to administer and complete the test is about 30 minutes.

This questionnaire is especially easy to administer to children who have reached the reading level required to complete the questionnaire without help from the administrator, and thus can be administered to large groups (Smolak & Levine, 1994). This instrument does not diagnose an eating disorder, but rather identifies attitudes towards eating and dietary behavior. Therefore this measure is not diagnostic, but can be a useful screening tool to assess children potentially at risk of developing an eating disorder. Both internal consistency and test-retest reliability are reasonably high (co-efficient alpha of 0.76 and 0.81 respectively). Christine, Watkins, and Lask (2000) also found the ChEAT to have high internal consistency, (co-efficient alpha = 0.87). Concurrent validity test showed the ChEAT to be moderately correlated with weight management behavior ($r = .36, p < .001$) and with body dissatisfaction ($r = .39, p < .001$).

The Kid's Eating Disorders Survey (KEDS) The KEDS (Childress, Brewerton, Hodges, & Jarrel, 1993) was developed from the Eating Symptoms Inventory, which is based on the DSM-II criteria and was used in a high school survey of eating disorders in adolescents. This test was developed to address the marked differences in cognitive development between children and adolescents, by producing a simpler and shorter questionnaire, in which "yes," "no," and "don't know" responses are all that are required.

There are 14 items on the questionnaire, which include a set of eight drawings of boys and eight drawings of girl, which range from very underweight to very overweight. The child is asked to circle the drawing that looks most like them, in order to assess weight and body dissatisfaction. The measure is used within the general population as a screening device. The KEDS has been found to have highly significant test-retest reliability (0.83, $p < .01$) when re-administered to 230 children within four months of the original survey.

Interview Measures

Four interview measures are used to identify those at risk for the development of an eating disorder (Netemyer & Williamson, 2001). Three of the interviews are labeled as structural interviews: (a) the Clinical Eating Disorder Rating Instrument, (b) the Interview of Eating Disorders, and (c) the Structured Interview for Anorexia and Bulimia Nervosa. The fourth interview is a semi-structured interview developed by Cooper and Fairburn (1987). It is called the Eating Disorder Examination (EDE). This is the only interview instrument that has been adapted for the use of children.

The Child EDE includes four main modifications from the EDE for adults (Netemyer & Williamson, 2001). First the language of the child's version has been changed to make the interview acceptable and comprehensible for children. Second, the introduction to the interview has been altered. The parent of the child being interviewed is asked to keep a journal, which is given to the child at the beginning of the interview and used as a memory cue. The third difference relates to the issue of intention. As some children's eating behaviors are controlled by parents or environment, it was felt necessary to get a sense of what behaviors the child might engage in when unsupervised or not

controlled by their parents or caregivers. Thus, a number of the questions on the child version of EDE ask about both actual behavior and intended behavior. The forth difference is the child is asked general questions rather than specific questions regarding self-judgment.

A pilot study by Bryant-Waugh, Cooper, Taylor & Lask (1996) evaluated a group of 16 children aged between 7 and 14 in a child eating disorders clinic, and found the interview was well tolerated, and children easily cooperated. Most the responses to the individual items were found to be consistent with clinical observations, thus suggesting the potential validity of this measure. Frampton (1996) conducted a similar survey. He interviewed 30 clinical subjects and 30 normal controls between the ages of 8 and 14 year. He found children given clinical diagnoses of anorexia nervosa virtually mirrored the subscale scores of the adult anorexia nervosa standardized sample.

Family Assessment

Family assessment aims to explore both past and present issues (Schlundt & Johnson, 1990). It is achieved partly through observing relationships between all family members, particularly focusing on the quality of interactions between each person. There are 5 components of family assessment that are important to identify. By identifying the quality of the parental relationship, familial boundaries, familial atmosphere communication processes, and sibling attachment styles, health professionals can determine how much role the family plays in risking development of an eating disorder.

Review of School-Based Primary Prevention Programs

There are only a handful of published studies evaluating the success of primary prevention programs in schools (Levine & Smolak, 2001). In general previous programs

have focused initially on providing information about eating disorders and the adverse effects of dieting and other weight regulation behaviors. Secondly these programs concentrated on developing skills to resist social pressures to diet. According to Levine and Smolak (2001) there have been 10 studies of children ages 9 through 11, which have focused on the prevention of negative body image and eating problems (note more studies may have been conducted and are in the process of publication). The most insightful studies are summarized as followed:

Levine and Smolak (2001) reported the effectiveness of six 1-to-2 hour lessons, which addressed social pressures to be thin, the nature of healthy and disordered eating, and the relationship between body size and self-esteem. Compared to a nonrandom control group attending a different school, 5th and 6th grade students (mean age=10.4) receiving the curriculum learned more about topics and had greater body satisfaction. They also had lowered scores on the ChEAT.

Huon, Roncolato, Ritchie, and Braganza (1997) also evaluated, in an uncontrolled, repeated measures design with six-month follow-up, six weekly lessons designed to help girls (median age=17.5) understand how peers, media, and physical development influence body image and dietary practices. The girls worked individually and in discussion groups. There were no significant pre-to post program changes in nutritional knowledge, body liking, body dissatisfaction or drive for thinness. However these stabilities in mean change scores masked tremendous variability; some children benefited and some deteriorated (e.g. their drive for thinness increases). Girls who initially had the unhealthiest attitudes towards eating tended to show the greatest improvement.

Kater, Rohwer, and Levine (2000) reported more positive outcomes in their uncontrolled, pre-to post evaluation of a more extensive, 10-lesson elementary school curriculum. One category of lessons helped children understand what they cannot and should not control: the developmental changes of puberty, the impact of genetics on size and shape, and the short and long-term impact of calorie-restricting diets. A second category taught children what they can control: identity, moderation and variety in nutrition and exercise, and selection of realistic, encouraging role models. The final category concentrated on the development of resilience to unhealthy sociocultural messages about thinness and weight management, with a focus on critical thinking about media and history of cultural attitudes concerning body image. Participants in this preliminary study were 166 boys and girls ages 9-10 and 56 boys and girls ages 11-12. There were very positive pre-to post program changes in knowledge of curricular material, acceptance of diversity in shape and weight, positive body esteem, and rejection of the glorification of thinness. Relative to controls who showed no changes, children receiving the curriculum reported many improvements in knowledge, body satisfaction, critical thinking about the media, intentions to diet, and healthy choices related to nutrition and exercising.

Smolak, Levine, & Striegel-Moore conducted a controlled, quasi-experimental longitudinal evaluation of a 10-lesson curriculum for 4th and 5th grade girls and boys (1996). The focus was health promotion in the form of healthy eating and exercising, and tolerance of and appreciation for diversity in weight and shape, including avoidance of teasing. Parents of children in the curriculum condition received nine newsletters that

paralleled the children's lessons, as well as a final newsletter pertaining to the nature and identification of eating problems.

The program produced some significant short-term gains in knowledge about nutrition, dieting effects, body fat, and obese people. However with the exception of a positive change in the tendency of 5th graders to reduce their prejudice assumptions about people who are overweight. No significant pre-to-post program effects with regard to attitudes and behaviors were discovered. The two-year longitudinal follow-up compared experimental and control participants (now ages 11-13), along with a new control group consisting of young adolescents from schools not included in the original study.

Compared to this new control group, experimental participants were more knowledgeable, exhibited higher body esteem, and used fewer unhealthy weight management techniques. The scores of the original control group were intermediate, raising the possibility that the sociocultural impact of the original curriculum may have spilled over and influenced control participants within the same elementary schools.

Coller, Newumark-Sztainer, Bulfer, and Engebretson (1999) recently conducted an uncontrolled evaluation of six-lesson program for 22 girls ages 10-12 and their parents. Although the girls were engaged by the program's emphasis on activity-based learning concerning body image, media, and healthy eating, the program produced minimal changes in eating attitudes and behaviors. Body esteem improved over the course of the pre-to post program assessment for all conditions except for the 4th girls who participated in the program. This finding suggests that program content may have, for at least a significant minority of the girls, intensified or created negative feelings about their bodies.

According to Levine and Smolak (2000) there have been approximately 17 studies of prevention with adolescents in grades 6 - 8, ages 11 to 14. With an exception of Porter et al.'s (1986) fairly successful pilot study of a one-day program for children attending a summer camp, the remaining 14 studies are evaluations of classroom curricula. This section concentrates on a sample of controlled evaluations with at least three-month follow-up evaluations.

Killen and colleagues (1993) were the first to publish a controlled, long-term evaluation of a well-designed program clearly grounded in extensive prevention research and health promotion using social learning theory. In the 18 lessons addressed, many important topics via a variety of instructional techniques for improving and reinforcing knowledge, efficacy expectations, cultural literacy and resistance skills, and healthy behaviors were addressed. The program produced only modest increases in knowledge and no short or long term changes in attitudes or behaviors. Program developers feel that lack of statistical power obscured a positive impact of the program on students with high levels of weight concerns.

Another controlled evaluation also produced disappointing but intriguing results (Levine, & Smolak, 2001). Six 45-minute lessons addressed sociocultural pressures to be thin, dieting, and body weight regulation, and nature and signs of eating disorders, and aspects of such as coping with stress, low self-esteem, and the developmental tasks of adolescence. The program enhanced the knowledge of the experimental group, and this effect was maintained at six-month follow-up. For the experimental group there were small but significant pre-to post program decreases in dietary restraint, shape concerns,

eating concerns, and EDE-Q and EAT scores. However, at the next six-month follow-up scores on all variables reverted to baseline.

O'Dea and Abraham (2000) evaluated a nine-lesson program titled *Everybody's Different*. This curriculum offers group-oriented, cooperative, "student-centered" learning activities to help young adolescent boys and girls to foster a positive body image and self-esteem, to promote life skills, and to engage positive feedback from significant others. At posttest and relative to the control group, body satisfaction increased and weight loss efforts decreased for participants in the program. Moreover, the program was successful in the short and long-term in decreasing the concerns about physical appearance and social acceptance. However, there were no significant changes in EDI-Drive for Thinness, and the relative improvement in the body satisfaction dissipated at 12-month follow-up. More troubling, there was significant pre-to follow up increase of 9% in the number of girls in the intervention group trying to lose weight, whereas the comparable figure for the control group was 6% (a non-significant increase).

Despite the largely negative results of previous studies, schools remain an important arena where it is possible to target those most at risk for developing an eating disorder. The task is to design a program which draws on the strengths of previous programs, but which includes additional components to produce changes in attitudes and behavior which are maintained in the primary.

The review of literature reveals the highly variable, often questionable methodology of the studies, many of which were pilot projects. Table 1 presents an idealized checklist of the essential ingredients that would enable researchers to draw

conclusions about the nature and effects of programs designed to reduce the number of new cases resulting from the continuum of body image and eating problems.

Table 1

Basic Ingredients of an Ideal Prevention Outcome Study

- Specification of goal as universal prevention and/or behavior change in children or adolescents already showing prodromal problems.
- Clear translation of a theoretical model for prevention into specific program components.
- Unbiased assignment of samples to experimental and comparison conditions, plus assessment of cross-fertilization of programmatic ideas to the comparison group.
- Valid measurement, using quantitative and qualitative data, of outcome variables pertaining to risk (e.g., belief in the importance of thinness), resilience (e.g., definition of self in terms of multiple interests and competencies unrelated to weight and shape), and the continuum of eating problems.
- Specification of program ingredient, how problem staff were trained and supported in implementing them, and to what extent (e.g./ BMI, gender, ethnicity, depression) before the program (e.g., at age 10), immediately following the program (e.g., three months later), and during at least one follow-up wave that coincides with the period of risk (e.g., middle adolescence).
- Assessment of changes in the ecology of the children's and adult's lives (e.g., in the school system).
- Data analyses that is sensitive to the possibility that some children in the experimental group may be negatively affected by the prevention program as well as to effect sizes.

Note. From *Body Image, Eating Disorders, and Obesity in Youth* by P. Levine and L. Smolak, Washington DC: American Psychological Association. Copyright 2001 by American Psychological Association.

Treatment

Few controlled studies assessing treatment outcomes for children and adolescents with eating disorders have been conducted (Gore, Vander Wal, & Thelen, 2001).

Nonetheless, this population continues to present the need for treatment. A review of adult research can help identify potential interventions for children and adolescents. Adult literature contains three major treatment modalities that have shown the most promise and are applicable to children. They are: behavioral therapy (BT), cognitive-behavioral therapy (CBT), and interpersonal therapy (IPT). First, outcome studies of these treatments with adult participants will be briefly reviewed. Second, studies addressing the use of hospitalization and medication in treatment will be examined. In each of these areas, suggestions are made regarding possible applications to children.

Behavioral Therapy

Behavioral therapy for bulimia nervosa typically involves exposure and response prevention, during which the clients eat feared foods in presence of the therapist while purging is prevented (Gore et al., 2001). The outcomes of this type of therapy are mixed. BT has been found to decrease vomiting and to favorably change obsessive thoughts, interpersonal sensitivity, depression and binge eating. However, depression, feelings of being fat, urges to exercise and food intake have not been found to change following a course of BT. Behavioral therapy for anorexia nervosa often takes the form of granting privileges for weight gain. When comparing BT to CBT differences were found on measures of eating disorder symptomology. Although improvements occurred in weight, nutritional functioning, menstrual functioning, and psychosexual functioning, preferred weight, drive for thinness, and depressed mood regardless of group membership, the majority of participants could not be considered recovered.

Given the frequent use of behavioral techniques in treating various eating disorders, it is likely that these techniques could be effective in treating younger

populations (Kerwin & Bekowitz, 1996). Research suggests children with eating disorders may benefit from gradual exposure to fear foods coupled with relaxation training. Secondly they could learn to address social and familial problems via role-playing. Celebrities who promote a strong and healthy body image may be used as role models. Finally reinforcements can be implemented to promote positive behavioral change or weight gain.

Cognitive-Behavioral Treatment

Cognitive-behavioral treatment is a problem-focused therapy based on the premise that treatment should modify extreme attitudes about eating and the body (Wilson & Pike, 1993). The therapy typically combines behavioral techniques, such as self-monitoring of food intake, avoidance of high-risk situations and stimulus control, with cognitive strategies to combat dysfunctional thoughts related to food and weight. In addition, coping skills training, and relapse prevention techniques are included. CBT has found to decrease bulimic symptomatology, increase overall adjustment, decrease depressive symptomatology and improve body image (Levine & Smolak, 2001). There are significantly fewer studies of CBT for anorexia nervosa. Cooper and Fairburn (1987) suggested that CBT might be effective in treating anorexia nervosa, especially in women who also suffer from bulimic episodes.

Although these studies reviewed adult treatment, there may be applications for children and adolescents (Gore et al., 2001). Because of CBT's metacognitive approaches, this type of treatment may be more difficult for younger children to utilize. However, using modified CBT, children and adolescents could be treated as effectively as adults. Techniques such as identifying and correcting cognitions and developing

cognitive coping strategies have been used in the treatment of children with anxiety disorders. It is suggested that similar techniques then could also be effective in the treatment of eating disorders among the child populations.

Interpersonal Therapy

Interpersonal therapy does not directly address eating attitudes and behaviors. Rather symptoms are placed in a larger interpersonal context (Gore et al., 2001). Thus the focus of treatment is on interpersonal events appearing to trigger problematic behaviors. These events fall into four categories: grief, interpersonal role disputes, role transitions, and interpersonal deficits. Treatment involves exploring individual events, defining problems, and practicing new behaviors. Varying studies have shown IPT is effective in improving overall eating disorder symptomology as BT or CBT.

The potential of IPT as a treatment of adolescents suffering from bulimia nervosa holds future promise. An IPT treatment for adolescents suffering from depression has been developed using the same concepts used in treating adults (Mufson, Woreau, Weissman, & Klerman, 1993). This treatment involves a focus on present and future role disputes and life choices. Treatment is similar to that used with adults, with the primary difference involving a focus on developmental changes experienced in adolescence. This advancement suggests that the same could be done for treating adolescents suffering from an eating disorder. The applicability of IPT to children is less certain, because IPT has not been modified to treat children. Further, two (role disputes and role transitions) of the four focus areas of IPT do not appear to be relevant for children. However, interpersonal deficits and grief could be appropriate topics for treatment.

Family Therapy

Family therapy as a treatment for eating disorders has also been suggested. Family therapy tends to address family conflict, criticism, and cohesion (Gore et al., 2001). Research shows that family therapy appears to be especially suited for treatment of families of anorexia women who are 18 years or younger and who have had symptoms for a relatively short amount of time. Literature on the treatment of bulimia nervosa is sparse and the appropriateness of family therapy as sole treatment for bulimia is somewhat unclear.

Hospitalization and Medications

Hospitalization is required when weight loss, physical complications and/or suicidal risks are so severe that life is threatened (Robin, Gilroy, & Bennis, 1997). Treatment in inpatient facilities typically involves a behavioral component where weight gain leads to an increase in privileges. The actual privileges used and the amount of weight gain expected varies. The majority of research on medications used to treat eating disorders focuses on antidepressants. The use of medication may be considered a last resort when the client has not responded to psychological treatments in the past or if the eating disorder is comorbid with depression.

CHAPTER 3: SUMMARY/CONCLUSION

This chapter concludes and summarizes the information presented in the previous chapters. By reviewing the information presented, it will be evident why the topic of eating disorders is important to the field of education and specifically to school psychologists. Implications for school psychologists will be discussed at the end of this chapter.

Summary

In order for school psychologists to play pivotal roles in the prevention and identification of eating disorders, the many facets of anorexia and bulimia nervosa need to be understood in terms of recent and relevant research. Anorexia and bulimia are disorders possibly affecting up to 20% of the current population. Increased prevalence of these disorders makes it an extremely relevant and serious issue for all individuals who work with adolescents. Females in modern society are influenced by various media sources, which reinforce the idea that extremely thin is attractive and desirable. When adolescents, especially females enter into puberty they are experiencing an overwhelming amount of change in their lives. These changes, combined with media influences can lead to devastating eating patterns and behaviors. This is the time when adults and professionals involved in a young girl's life can help the most.

A variety of studies about anorexia nervosa and bulimia nervosa were reviewed in this paper. Definition, history, risk factors, symptoms, complications, and progression of the disorder were reviewed in the second chapter. In addition, chapter two attempted to provide the most current and useful research needed to assess those individuals who may

be at risk for the development of an eating disorder and implement primary prevention programs.

Many researchers addressed the importance of assessment and prevention. Despite its importance, very few effective and evaluated primary prevention programs have been developed. Almost every research study reviewed expressed a concern regarding stopping the disturbed thoughts and patterns of eating before they can develop into eating disorders such as anorexia and bulimia. According to many researchers, if schools can be made aware of the increasing prevalence of these disorders, they can take an active role in helping prevent them emerge. There are developed assessment tools and primary prevention programs which have been evaluated, however, only a few are useful in the general educational setting to help stop the disordered and disturbed thoughts from developing. Due to poor prognosis and low rates of cured individuals with eating disorders, it should be evident through research presented in the paper, that assessment and prevention is the way to identify concern and prevent an eating disorder from surfacing. School children constitute the perfect population for screening methods and prevention programs to be utilized. This is where school psychologists can play a critical role.

Implications for School Psychologists

School psychologists enter the schools with specific knowledge and training. In terms of eating disorders, school psychologists need to be equipped with educational resources, valid assessment tools and primary prevention programs to assist in identifying and preventing adolescents from developing an eating disorder.

School psychologists can assist in educating teachers to watch for warning signs of eating disorders. Teachers are powerful role models who may be able to advocate healthy goals and attitudes. These school personnel can also help adolescents to evaluate the current emphasis on unrealistically thin standards of beauty and health. School psychologists should take it upon themselves to make sure athletic coaches are aware of the possible effects of training demands and be encouraged to emphasize fitness and general health rather than maintenance of an absolute standard of weight. Parents can be educated to the signs of possible eating disorder trouble through workshops and parent groups.

The school psychologists should implement screening procedures in order to readily identify any person at risk of developing an eating disorder. Such tools would be useful in building a preventive program about eating disorders into the school system's curriculum for adolescent students. Key programs should contain the following items: specification of goal as universal prevention, clear translation of a theoretical model for prevention, unbiased assignment of samples to experimental and comparison conditions, valid measurement, staff training, and appropriate program analysis methods.

As part of a prevention program, the school psychologist may wish to consider forming a support group, either for parents or students. A school psychologist could obtain assistance from one of the national eating disorder associations in implementing the group. The purpose of such a meeting is not to treat individuals but rather talk about issues related to eating disorders in order to prevent eating disorder behavioral patterns from emerging.

It is important that the school psychologist become familiar with all methods possible to help eating disorders from developing. Because therapeutic intervention with individuals with anorexia or bulimia is a long-term process requiring specialized knowledge, school psychologists will often not provide direct or immediate service. However, they can make important contributions to the identification and treatment efforts provided by other professionals. They can also take an active role in screening and primary prevention endeavors through the schools to reduce the incidence of this serious health problem.

REFERENCES

- Abraham, S., & Llewellyn-Jones. (1992). *Eating disorders: The facts*. United States of America: Oxford University Press.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC: Author.
- Berg, F. M. (1997). *Afraid to eat*. Hettinger, ND: Healthy Weight Publishing Company.
- Blundell, J. E., & Hill, A. (1993). Binge eating: Psychobiological mechanisms. In C. G. Fairburn & G. T. Wilson (Eds.). *Binge eating, nature assessment and treatment* (pp. 15-39). NY: Guilford Press.
- Bruch, H. (1982). Anorexia nervosa: Therapy & theory. *American Journal of Psychiatry*, 139, 1537-1538.
- Childress, A. C., Brewerton, T. D., Hodges, D. L., & Jarrel, M. P. (1993). The Kids' Eating Disorder Survey (KEDS): A study of middle school students. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 843-850.
- Christine, D., Watkins, B., & Lask, B. (2000). Assessment. In B. Lask & R. Bryant-Waugh, *Anorexia nervosa and related eating disorders in childhood and adolescence* (pp. 105-126). United Kingdom: Psychology Press Ltd.
- Cok, F. (1990). Body image dissatisfaction in Turkish adolescents. *Adolescence*, 25, 409-413.
- Coller, T. G., Neumark-Sztainer, D., Bulfer, J., & Engebretson, J. (1999). Taste of food, fun, and fitness: A community-based program that teaches young girls to feel better about their bodies. *Journal of Nutrition Education*, 31, 283-286.
- Cooper Z., & Fairburn, C. G. (1987). The eating disorder examination: A semi-structured interview for the assessment of the specific psychopathology of eating disorders. *International Journal of Eating Disorder*, 6, 1-8.
- Crago, M., Shisslak, C., & Estes, L. (1996). Eating disturbances among minority groups: A review. *International Journal of Eating Disorders*, 19, 239-248.
- Crisp, A., Palmer, R., & Kelucy, R. (1976). How common is anorexia nervosa: A prevalence study. *British Journal of Psychiatry*, 128, 549-554.
- Doyle, J., & Bryant-Waugh, R. (2000). Epidemiology. In B. Lask & R. Bryant-Waugh, *Anorexia nervosa and related eating disorders in childhood and adolescence* (pp. 41-61). United Kingdom: Psychology Press Ltd.

- Dyer, G., & Tiggemann, M. (1996). The effect of school environment of body concerns in adolescent women. *Sex Roles, 34*, 127-138.
- Fairburn, C. G., Welch, S. L., Doll, H. A., Davies, B. A., & O'Connor, M. E. (1997). Risk factors for bulimia nervosa: A community-based case-control study. *Achieves of General Psychiatry, 52*, 304-312.
- Fava, M., Copeland, P. M., Schweiger, V., & Herzog, D. B. (1989). Neurochemical abnormalities of anorexia nervosa and bulimia nervosa. *American Journal of Psychiatry, 146*, 963-971.
- Fosson, A., Knibbs, J., Bryant-Waugh, R., & Lask, B. (1987). Early onset anorexia nervosa. *Archives of Disease in Childhood, 61*, 114-118.
- Frampton, I. (1996). *Are overvalued ideas about weight and shape overvalued ideas in the diagnosis of eating disorders? Evidence form early onset anorexia nervosa.* Unpublished research dissertation, University of Exeter, UK.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia, *International Journal of Eating Disorders, 2*, 15-34.
- Giannini, J., Newman, M., & Gold, M. (1991). Anorexia and bulimia. *AFP, 4*, 1169-1176.
- Gordon, R. A. (2000). *Eating disorders: Anatomy of a social epidemic.* (Rev. ed.). Malden, MA: Blackwell Publishers.
- Gore, S. A., Vander Wal, J. S., & Thelen M. H. (2001). Treatment of eating disorders in children and adolescents. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 293-311). Washington, DC: American Psychological Association.
- Gowers, S., Norton, K., Halek, D., & Crisp, A. H. (1994). Outcomes of outpatient psychotherapy in a random allocation treatment study of anorexia nervosa. *International Journal of Eating Disorders, 15*, 165-177.
- Haslam, R., & Valletutti, P. (1996). *Medical problems in the classroom: The teacher's role in diagnosis and management.* (Rev. ed.). Austin, TX: PRO-ED, Inc.
- Hawley, R. (1985). The outcome of anorexia nervosa in younger subjects. *British Journal of Psychiatry, 146*, 657-660.
- Henderson, A., & Chaplin, S. (1998). *Promoting teen health: Linking schools, health organizations, and communities.* Thousand Oaks, CA: SAGE Publications, Inc.

- Higgs, J., Goodyer, I., & Birch, J. (1989). Anorexia nervosa and food avoidance emotional disorder. *Archives of Disease in Childhood*, *64*, 95-105.
- Hoek, H. (1993). Review of epidemiological studies for eating disorders. *International Review Psychiatry*, *5*, 61-74.
- Horesh, N., Apter, A., Lepkifker, E., Ratzoni, G., Weizmann, R., & Tyano, S. (1995). Live events and severe anorexia nervosa in adolescence. *Acta Psychiatrica Scandinavica*, *91*, 5-9.
- Huon, G. F., Roncolato, W. G., Ritchie, J. E., & Braganza, C. (1997). Prevention of diet-induced disorders: Finding and implications of a pilot study. *Eating Disorders: The Journal of Treatment and Prevention*, *5*, 280-293.
- Jacobs, B., & Isaacs, S. (1996). Prepubertal anorexia nervosa: A retrospective controlled study. *Journal of Child Psychology and Psychiatry*, *27*, 237-250.
- Kater, K. J., Rohwer, J., & Levine, M. P. (2000). An elementary school project for developing healthy body image and reducing risk factors for unhealthy and disordered eating. *Eating Disorders: The Journal of Treatment & Prevention*, *8*, 3-16.
- Kerwin, M. E., & Berkowitz, R. I. (1996). Feeding and eating disorder: Ingestive problems of infancy, childhood, and adolescence. *School Psychology Review*, *25*, 316-328.
- Killen, J. D., Taylor, C. B., Hammer, L., Litt, I., Wilson, D. M., Rich, T., Simmonds, B., Kraemer, H., & Varady, A. (1993). An attempt to modify unhealthy eating attitudes and weight regulation practices of young adolescent girls. *International Journal of Eating Disorders*, *13*, 369-384.
- Kinzel, J. F., Traweger, C., Guenther, V., & Bieble, W. (1994). Family background and sexual abuse associated with eating disorders. *American Journal of Psychiatry*, *151*, 1127-1131.
- Lask, B. (2000). Aetiology. In B. Lask & R. Bryant-Waugh, *Anorexia nervosa and related eating disorders in childhood and adolescence* (pp. 63-79). United Kingdom: Psychology Press Ltd.
- Levine, P. (1987). *How schools can help combat student eating disorders: Anorexia and bulimia*. United States of America: National Education Association.
- Levine, P., & Smolak, L. (2001). Primary prevention of body image disturbances and disordered eating in childhood and early adolescence. In J. K. Thompson & L. Smolak (Eds.), *body image, eating disorders, and obesity in youth* (pp. 237-260). Washington, DC: American Psychological Association.

- Mintz, L., O'Halloran, M., Mulholland, A., & Schneider, P. (1997). Questionnaire for eating disorder diagnoses: Reliability and validity of operationalizing DSM-IV criteria into a self-report format. *Journal of Counseling Psychology, 44*, 63-71.
- Mitchell, J. E., & deZwann, M. (1993). Pharmacological treatments of binge eating. In C.E. Fairburn & G.T. Wilson (Eds.), *Binge eating: Nature, assessment, and treatment*. New York, NY: Guilford.
- Morrison, J. (2001). *DSM-IV made easy: The clinician's guide to diagnosis*. New York, NY: Author.
- Mufson, L. H., Worau, D., Weissman, M. M., & Klerman, G. L. (1993). Interpersonal psychotherapy for adolescent depression. In G. L. Klerman & M.M. Weissman (Eds.), *New applications of interpersonal psychotherapy* (pp. 129-166). Washington, DC: American Psychiatric Press.
- Netemeyer, S. B., & Williamson D. A. (2001). Assessment of eating disturbance in children and adolescents with eating disorders and obesity. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 215-233). Washington, DC: American Psychological Association.
- Nolen-Hoeksema, S. (1998). *Abnormal Psychology*. Dubuque, IA: McGraw-Hill.
- Palmer, R. (2000). *Helping people with eating disorders: A clinical guide to assessment and treatment*. New York, NY: John Wiley & Sons Ltd.
- Peters, C., Swassing, C., Butterfield, P., & McKay, G. (1984). Assessment and treatment of anorexia nervosa and bulimia in school age children. *School Psychology Review, 13*, 183-191.
- Pope, H. G., & Hudson, J. I. (1992). Is childhood sexual abuse a risk factor for bulimia nervosa? *American Journal of Psychiatry, 149*, 455-463.
- Porter, J., Morrell, T., & Moriarty, D. (1986). Primary prevention of anorexia nervosa: Evaluation of a pilot project for early and pre-adolescents. *The Canadian Association of Health, Physical Education, and Recreation Journal, 52*, 21-26.
- O'Dea, J., & Abraham, S. (2000). Improving the body image, eating attitudes and behaviors of young and behaviors of young male and female adolescents: A new educational approach which focuses on self esteem. *International Journal of Eating Disorders, 28*, 43-57.
- Robin, A. L., Gilroy, M., & Bennis, A. B. (1998). Treatment of eating disorders in children and adolescents. *Clinical Psychology Review, 18*, 421-446.

- Rosen, J., Jones, A., Ramiez, E., & Waxman, S. (1996). Body shape questionnaire: Studies of validity and reliability. *International Journal of Eating Disorders*, 20, 315-319.
- Satter, E. (1987). *How to get your kid to eat...but not too much*. Palo Alto, CA: Bull Publishing Company.
- Schlundt, D., & Johnson, G. (1990). *Eating disorders: Assessment and treatment*. Needham Heights, MA: Allyn and Bacon.
- Shisslak, C. M. & Crago, M. (2001). Risk and protective factors in the development of eating disorders. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 215-233). Washington, DC: American Psychological Association.
- Shisslak, C. M., Crago, M., & Neal, M. E. (1990). Prevention of eating disorders among adolescents. *American Journal of Health Promotion*, 5, 100-105.
- Siegel, L. (1990). Somatic disorders of childhood and adolescence. *School Psychology Review*, 19, 174-185.
- Slade, P., & Dewey, M. (1986). Development and preliminary validation of SCANS: A screening instrument for identifying individuals at risk of developing anorexia and bulimia nervosa. *International Journal of Eating Disorders*, 5, 863-872.
- Smolak, L., Levine, P. M. (1994). Toward an empirical basis for primary prevention of eating problems with elementary school children. *Eating Disorders: The Journal of Treatment & Prevention*, 2, 293-307.
- Smolak, L., & Levine, P. M. (2001). Body image in children. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 215-233). Washington, DC: American Psychological Association.
- Smolak, L., Levine, P. M., & Striegel-Moore, R. (1996). *The developmental psychopathology of eating disorders: Implications of research, prevention, and treatment*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Steinberg, A. B., & Phares, V. (2001). Family functioning, body image, and eating disturbances. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 127-147). Washington, DC: American Psychological Association.
- Strober, M. (1986). Anorexia nervosa: History and psychological concepts. In D. D. Brownell & J. P. Foreyt (Eds.), *Handbook of eating disorders*. (pp. 231-246). New York: Basic Books.

- Thompson, k. J., & Smolak L. (2001). Body image, eating disorders, and obesity in youth. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth* (pp. 1-18). Washington DC: American Psychological Association.
- Welch, S. L., & Fairburn, L. G. (1994). Sexual abuse and bulimia nervosa: Three integrated case control comparisons. *American Journal of Psychiatry*, 151, 402-407.
- Wertheim, E. H., Paxton, S. J., Schultz, H. K., & Muir, S. L. (1997). Structural modeling analysis of body dysphoria and eating disorder symptoms in preadolescent girls. *Eating Disorders: Journal of Treatment and Prevention*, 5, 15-27.
- Williamson, D. (1990). *Assessment of eating disorders*. United States of America: Pergamon Press.
- Wilson, G. T., & Pike, K. M. (1993). Eating disorders. In D. H. (Eds.), *Clinical handbook of psychological disorders* (2nd ed., pp. 278-317). New York: Guilford Press.
- Woodside, D. (1993). Genetic contributions to eating disorders. In A. Kaplan & P. Garfinkel (Eds.), *Medical issues in eating disorders: The interface* (pp. 193-211). New York, NY: Brunner/Mazel.
- Wurtman, J. J. (1987) Disorders of food intake: Excessive carbohydrate snack intake among a class of obese people. *Annals of the NY Academy of Sciences*, 499, 197-202.
- VanThorre, M. D. & Vogel, F. X. (1985). The presence of bulimia in high school females. *Adolescence*, 77, 45-51.