DENIAL AND ANOREXIA NERVOSA

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Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
DECEMBER, 1994

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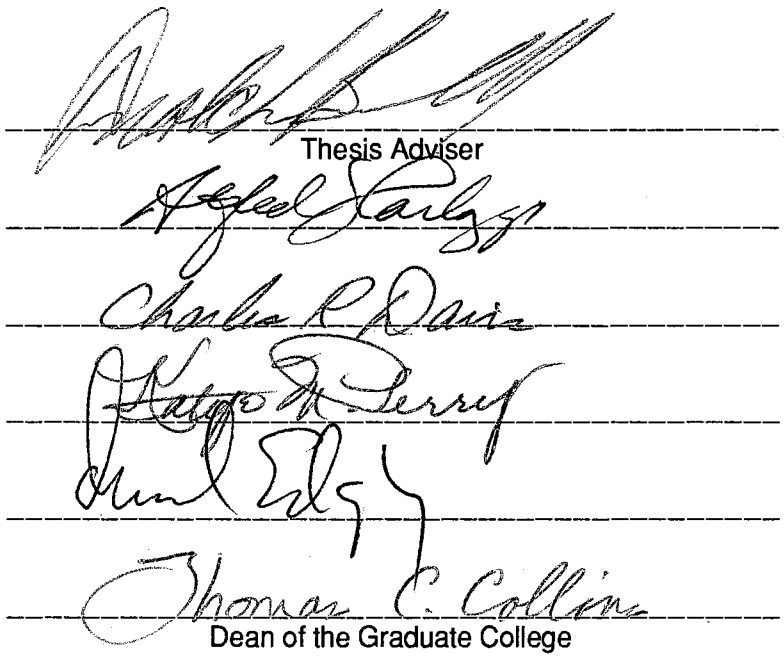
Thesis Approved:



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ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to Dr. Don Boswell, who was instrumental in his encouragement and guidance during the dissertation process. My sincere appreciation extends to other committee members who offered assistance that proved most valuable. Additionally, I wish to thank Dr. Tamara Pryor for her supervision, ideas, inspiration, support, and vast knowledge base of the subject that served as resource for the entire project.

I would also like to acknowledge to my family. Special appreciation is extended to my mother for her unfailing love and support, and to my late father who offered his own brand of encouragement that set the stage for achievement and excellence within the family. To my many brothers and sisters I thank as well, for it is their unique sense of humor that I found most helpful during many difficult times. My husband is appreciated for his encouragement and belief that I would finish. My daughters both offered understanding well beyond their years, and demonstrated remarkable stamina throughout the graduate school process.

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CHAPTER I

INTRODUCTION

Anorexia nervosa and bulimia nervosa are prevalent eating disorders with potential for substantial morbidity and mortality. These psychiatric disorders are not only complex and multidimensional, they are quite heterogeneous in their presentation. It is also known that these disorders may follow a protracted course. They are often chronic and associated with high levels of comorbidity (Halmi et al., 1991; Herzog et al., 1993; Herzog, Keller, Sacks, Yeh, & Lavori, 1992). Although they have been studied as separate disease entities for some time now, the etiology of these disorders remains undetermined (Herzog et al., 1992). Additionally, multiple perpetuating factors can contribute to the course of the illness, often leading to chronic disability or even death (Garner & Garfinkel, 1980; Ratnasuriya, Eisler, Szmukler, & Russell, 1991). Eating disorders present a diagnostic and therapeutic challenge. With all that is known, they remain enigmatic and often recalcitrant illnesses.

Although forms of disordered eating have been mentioned in the literature for centuries (for examples of historical reviews see DiNicola, 1990; Habermas, 1989,1992; Vandereycken & Van Deth, 1989; Waltos, 1986), it would appear that there is increasing incidence during the past 40 years (Russell, Szmukler, Dare, & Eisler, 1987). The disease has increasingly become more widespread, encompasses a wider age group (Turner, 1990), and, in the recent past, is more frequently encountered professionally (Steinhausen, Rauss-Mason, & Seidel, 1991). The significant distress and disruption it causes to the individual and family is well-known (Atwood, 1988; Bruch, 1978; Minuchin, Baker, & Rosman, 1975; Ratnasuriya et al.,

1991).

Anorexia nervosa and bulimia nervosa are receiving increasing attention in the scientific literature. Their increase in prevalence, their significant morbidity and mortality, and the intractable nature of chronic forms that develop appear to justify the increase in research and help to provide knowledge of the course and outcome of these disorders.

Background of the Problem

Historically, eating disorders have presented quite a challenge to the clinician and researcher alike. Early efforts and confusion surrounding these disorders are well documented in historical reviews (DiNicola, 1990; Vandereycken & Van Deth, 1989; Waltos, 1986). These reviews also chronicle how the investigation of the eating disorders has continued into the modern era, with anorexia nervosa, bulimia nervosa, and related eating disorders emerging as distinct clinical entities.

A number of diagnostic criteria for the eating disorders have been developed over the years, many of which are still used today (American Psychological Association, 1980, 1987, 1993, 1994; Bruch, 1973; Feighner, 1972; Garfinkel & Garner, 1982). Present day descriptions of the syndromes have generally included anorexia as a preoccupation with thinness, a refusal to maintain a healthy body weight, and a disturbance of body image. Bulimia nervosa is characterized by rapid ingestion of a large quantity of food in a discreet period of time. Some individuals with bulimia also engage in purging activity. Anorectics may exclusively restrict their food intake, or may have episodes of bulimia followed by self-induced vomiting. A number of researchers have attempted to address the distinction and overlap in the two syndromes (Garfinkel, Garner, & Goldbloom, 1987; Garner, 1991).

Both syndromes offer challenge to the researcher. This study, however, will attempt to focus on anorexia nervosa. Although it is a disorder with characteristic psychopathology, it is quite heterogeneous in its presentation. One of the better known features of anorexia is the individual's resistance and ambivalence toward intervention. Some patients minimize their disordered eating, while others may deny their illness altogether. Efforts to encourage an individual toward treatment can be frustrating for the physician or other professional. Once presenting to treatment, the anorectic may choose to follow the recommended treatment regimen or protocol. The anorectic's initial presentation, however, may have been the result of coercion by spouse, parents, family members, or others. Observant teachers, school nurses, and therapists who are able to recognize the illness may refer to specialized clinics or treatment professionals. Anorexia, however, can mimic various other illness, sidetracking the individual to gynecologists or other specialists.

Should the individual present to a clinic or professional who is able to treat the illness, a thorough psychological and psychiatric assessment and evaluation is necessary in making the diagnosis and ruling out other possibilities. Evaluation may include a battery of psychological tests that would facilitate a more accurate picture of the illness. There is a subgroup of anorexic individuals that present for this type of evaluation and obtain psychological test results that do not accurately reflect their presenting symptomatology; that is, their test results suggest that they have no disordered eating symptomatology. This is thought to represent denial by some professionals (Garner, 1991).

There is a paucity of research as to the presentation of denial in psychological inquiry and testing in anorexia nervosa patients. A number of studies have investigated

variables of prediction, risk factors, and outcome with anorexia (Halmi, Goldberg, Casper, Eckert, & Davis, 1979; Herzog, Keller, & Lavori, 1988; Herzog et al., 1993; Hsu, 1980; Morgan & Russell, 1975; Nagel & Jones, 1992; Ratnasuriya et al., 1991; Steinhausen & Glanville, 1983). Much of the information presented in this area, however, is contradictory and inconclusive. Conducting research has proven to be problematic for many reasons. There is difficulty accessing this population in sufficient numbers. Many of the studies have not used standardized measures and have widely differing diagnostic and outcome criteria. Hence, the lack of concordance for predictive variables among studies not only suggests that anorexia is a complex and multidetermined disorder, but appears to reflect the difficulty investigating this population as well.

Denial of illness in anorexia nervosa appears to be an important obstacle in assessment procedures, especially those that utilize self-report measures. This aspect, however, appears to be overlooked in the literature on anorexia. In order to quantify some aspects of the anorectic's features and presentation, several inventories and questionnaires have been developed. Some examples include the Analogue Scale Measurement (Folstein, Wakeling, & DeSouza, 1977), Eating Attitudes Test (Garner & Garfinkel, 1979), and the Anorectic Attitude Scale (Goldberg et al., 1980). However, these tests rely on self-reporting from the patients, and do not include a validity or lie scale (Vanderdeycken & Vanderlinden, 1983).

This study will focus on one of the newer inventories in an attempt to investigate the aspect of denial. The Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983) and the updated version, the Eating Disorder Inventory-2 (EDI-2; Garner, 1991), are a widely used tests developed specifically for this population. Item scores for each subscale are totaled to arrive at a subscale raw score. Raw scores for subscales

are plotted on profile forms which allow comparison with subscale norms derived from both eating disordered patients as well as female college students. Each subscale provides a continuous score; the higher the subscale score, the greater the manifestation of the trait thought to be related to eating disorders.

There is a subgroup of anorectics that present to treatment who have profiles that do not accurately reflect the patient's psychopathology, history, or symptom presentation. Profiles from these tests are not within the range of clinical significance. The present study will focus on differences between anorectics who do not have clinically elevated scores and anorectics who do have clinically elevated scores on the EDI and the EDI-2.

Research Problem

It is well-known and widely accepted that there is remarkable heterogeneity in the psychopathology associated with eating disorders. There are instruments that attempt to measure depth and severity of eating disorder symptomatology. The aforementioned EDI-2 and its predecessor, the EDI, are examples of this type of instrument. As part of a comprehensive intake process, this inventory is often given to individuals who present to eating disorder clinics. Other psychological testing may include the Beck Depression Inventory, The Bulimia and Related Eating Disorder Screen, The Millon Clinical Multiaxial Inventory II (MCMI II) or the Millon Adolescent Personality Inventory (MAPI), the Multidimensional Personality Questionnaire (MPQ), the Minnesota Multiphasic Personality Inventory 2 (MMPI-2) or the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A), or other tests.

This study will focus on the EDI and the EDI-2. There is a group of individuals who present at eating disorder clinics and similar treatment facilities with test results that do not accurately describe or reflect the presenting symptomatology and pathology.

These individuals' results on the EDI-2 yield what is commonly called a "flat" or denial profile. Test results of this type would suggest or indicate that the individual has no problem with disordered eating or other symptomatology thought to be associated with eating disorders. For the small group who present with test results of this type, it is believed that there is a percentage or subgroup that truly do not have an eating disorder (or that no clinical, medical, or other corroborative evidence can be found). For a much larger percentage of the same original group, however, this does not hold true. For this latter group that presents to an eating disorder clinic or similar treatment facility and obtains a denial profile, there is corroborating evidence from several sources that supports that the person does indeed have disordered eating patterns or even severe eating disorder pathology.

There is a paucity of information on this type of profile. The author of the EDI-2 reports that the flat profile "may be related to denial" (Garner, 1991). This study will attempt to investigate the relationship between this type of profile and other variables of interest.

Purpose of the Study

It is the intent of this study to examine the nature of those individuals who are known to have a diagnosis of an eating disorder, but who do not report eating disorder symptomatology on dimensions that are thought to be clinically relevant to the illness. This will be investigated by examining their profiles on an eating disorder inventory in relation to a measure of outcome, and in relation to rate of termination or months in treatment for the patient, to age of onset of the illness, age at presentation to treatment, body weight at intake and presentation to treatment, and incidence of prior treat effort.

Definition of Terms

Anorexia nervosa: The clinical syndrome characterized by a refusal to maintain body weight, fear of weight gain and body image disturbance. Specific diagnostic criteria as defined in the Diagnostic and Statistic Manual of Mental Disorders (fourth edition) (1994) and will be used in this study.

Percent Ideal Body Weight: This is a method used to assess body weight. For the purpose of this study, Ideal Body Weight will be derived from the Metropolitan Life Insurance Company height/weight tables (1983).

Denial profile: A profile obtained from an anorexic individual who has taken the EDI or the EDI-2 and whose scores are below clinical significance.

Deniers: Those anorexic individuals who have obtained EDI or EDI-2 test results that underreport their eating disorder pathology.

Admitters: Those anorexic individual who obtain test results on the EDI or EDI-2 that accurately reflect their presenting symptomatology.

Research Questions

For the purpose of this study, the following questions will be addressed:

1. Do deniers have lower percentage of Ideal Body Weight at presentation to treatment; will they have poorer outcome after one year; will they have had shorter duration of symptoms before they seek treatment; will they have had an earlier onset of the disorder than admitters; and will they be more likely than deniers to terminate sooner from treatment than admitters?

2. Will deniers be less likely than admitters to have had previous treatment for the disorder?

Significance of the Study

This study has import for several reasons. It seeks to add to information that clinicians are able to use when treating patients who are seeking treatment for eating disorders. Anorectics are characteristically resistant to treatment; many of the individuals who present to a treatment facility are encouraged or coerced by concerned family and friends. The intake and evaluation process can be a very tense and critical time for the individual and significant others who present to treatment. After the patient has undergone thorough psychological and psychiatric evaluation, feedback and recommendations for treatment are given. It is during this crucial time that individuals are given information as to prognosis, length of treatment, and course and possible outcome. Individuals with anorexia and their families are often initially quite resistant to treatment, and frequently express ambivalence about the initial diagnosis, or even the concept that there is anything amiss. It is for this reason that individuals who present for treatment and obtain denial profiles are especially challenging. The clinician is challenged, then, to explain that even though the individual has obtained this type of test profile, he or she do indeed have anorexia nervosa or similar eating disorder pathology. The present study adds to the body of knowledge that the clinician will be able to share with the patient during this initial contact.

Research has attempted to elucidate the etiology and epidemiology of eating disorders. The present study is important because anorexia is one of the few psychiatric illness that can be unremitting and eventuate in the patient's death. Knowledge of the origin, course, and outcome of this disorder will facilitate the design of intervention and treatment efforts that are more effective. Psychological assessment can be an integral part of treatment for the anorectic. For the purpose of this study, it is believed that

investigating variables associated with individuals who present as described will add to a needed knowledge base.

Assumptions

For the purpose of the present study, the following is assumed:

1. Individuals who present to the treatment facility are answering the test questions as they perceive them, and no one else is answering for them.
2. The corroborative evidence that supports the diagnosis of an eating disorder and outcome is accurate, such as age of onset, level of severity of symptomatology, reported weights on follow-up testing, and previous treatment experience.
3. With the exception of the variable "previous treatment," all dependent variables in this study are at least interval quality.

Limitations

1. Only female patients were used.
2. When investigating termination or months of treatment for each group, it is not known whether this total represents a premature termination, or a successful resolution of the problem.
3. Data collected at one treatment facility may not be representative of all individuals who present with similar test results at other treatment facilities, thereby limiting the generalizability of the findings.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter seeks to examine the literature relevant to the present study. The history of the disorder, clinical features, and epidemiology are addressed. The major causal hypotheses and etiological theories of anorexia nervosa will be reviewed, as well as the literature related to differential diagnosis and psychiatric comorbidity. Denial of illness as both a feature and impediment to treatment and recovery will be examined. Lastly, this chapter reviews outcome studies with anorexia nervosa.

History of the Disorder

From its initial description in the late 17th century, anorexia nervosa has undergone various descriptive and ideologic changes. Over the course of time, numerous definitions and theories of the etiology of anorexia have enjoyed prominence as the concept and understanding of eating disorders have become further refined. The emergence of anorexia nervosa as a discrete diagnostic entity is a result of this evolution.

Historical reviews demonstrate that food refusal and fasting have been described for many centuries (Brumberg, 1988; DiNicola, 1990; Tolstrup, 1990; Vandereycken & Van Deth, 1989; Waltos, 1986). Prior to 1600, however, information and accounts of the condition are known mainly from a religious context. Major religious figures engaged in fasting and asceticism which might be considered anorexia, but contemporaries had deemed it holy behavior and an expression of piety revered by many (Bell, 1985; Tolstrup, 1990). Indeed, cases of fasting saints have been the subject of medical discourse for centuries. The first detailed description, however, of the condition now known as anorexia was given by Sir Richard Morton in 1689. Calling it "a nervous atrophy", he spoke to the psychological influences that led to the act of self-starvation

and described a form of consumption without fever or dyspnea. Morton also noted associated loss of appetite, amenorrhea, constipation, extreme emaciation, overactivity, and indifference to their condition or recovery (Silverman, 1983; Waltos, 1986). In the 1600's and 1700's, other Europeans reported similar cases, using varying terms and cures. While these early accounts are part of the history of the attempt to understand self-starvation, it is not known with any certainty that they were actually cases of what is now considered anorexia nervosa (DiNicola, 1990). A historical investigation highlights how presentation of the illness has changed over time; its confusion with other medical illness has also included chlorosis, a form of anemia (Brumberg,1982).

Two hundred years after Morton's initial description, Sir William Gull in England and Dr. Charles Lasegue in France independently published their detailed medical accounts of the disease. Gull first used the term 'hysteric apepsia' in 1868; it was not until later that he coined the term 'anorexia nervosa'. At the same time, Lasegue named the disorder 'anorexie hysterique', a term which is still used in French-speaking countries (Turner, 1990; Waltos, 1986). It was during this period that anorexia nervosa was established as a clinical entity and widely regarded as a mental illness. Gull and Lasegue provided accurate descriptions and addressed the emotional component of anorexia. Treatment was not unlike the present regimen of nutritional rehabilitation, rest, separation from family, and supportive therapy (Waltos, 1986). There is some criticism of historical descriptions of anorexia in this period, however. Silverman (1987) maintains that some of these early accounts were actually cases of other syndromes such as hysterical food refusal and conditioned food aversions.

Reviewing the evolution of anorexia during the 1900's, DiNicola (1990) details accounts in the medical literature where cases of anorexia nervosa were mistakenly taken for Simmonds' Disease, an endocrinological disorder. It was later discovered that these cases were misdiagnosed, and once again anorexia nervosa was rediscovered as a mental disorder. Further investigation and research into the psychological and sociocultural determinants helped bring anorexia into the modern era. Critical work of this modern era include Selvini Palazzoli's (Palazzoli, 1985, Palazolli & Viaro, 1988) pioneering investigation of psychological and family approaches in Italy; Hilde Bruch's (1973, 1978) well-known psychodynamic approach and Salvador Minuchin's (Minuchin, Rosman, & Baker, 1978) family therapy approach in the United States; Paul Garfinkel and David Garner's (1982) extensive work on the multidimensional model in Canada; Gerald Russell's (1977) research on the medical consequences and, in London, Arthur Crisp's (Crisp, 1981; Crisp, & Kalucy, 1974) work on anorexia nervosa as an attempt to avoid adolescence.

Major Etiological Theories and Causal Hypotheses

As the understanding of anorexia has evolved over time, many theories of the origin of the illness have been formulated. It would appear from the literature that, although much is known about this disorder, no single, overriding causative agent has been identified. The illness is known to have a myriad of features and dimensions. The following is an attempt to organize the wide-ranging causal hypotheses, although none appear to be able to provide a satisfactory or complete explanation of the etiology of anorexia nervosa. In reviewing the literature, however, the theories appear to be useful in creating a working hypothesis in certain cases. They are organized under individual, family, and sociocultural theories.

Individual Theories of Etiology

This group of theories hold that anorexia nervosa is a personal dysfunction, unique to the individual. Biomedical, mood disorder, and psychological theories are addressed here.

Biomedical theories of the etiology of anorexia nervosa

It has been speculated that there is a biological cause for anorexia, since there are some physical conditions, as pituitary gland disorder, that result in drastic weight loss. It is also speculated that, at some point in the development of eating disorder pathology, biological factors come into play, making it difficult for the individual to discontinue eating disordered behaviors. Most individuals who have been given the diagnosis of anorexia, however, have had all known physical illnesses ruled out as causes (Atwood, 1988). Others (Patton, Wood, & Johnson, 1986) hold the view that physical illness should be regarded as a risk factor for developing anorexia.

Biomedical hypotheses of the etiology of anorexia and related eating disorders focus on the endocrine regulation of eating and weight control. Abnormalities in biochemical influences may effect changes in the endocrine regulation of eating and weight control. Russell (1977) proposed that primary hypothalamic dysfunction of unknown origin was underlying in the development of anorexia nervosa. Russell (1979) later observed that amenorrhea occurs in approximately one-third or more of anorexics prior to significant weight loss. He theorized that amenorrhea is the result of a primary disturbance of the the hypothalamus, and the full manifestation of the disturbance is brought about by psychological stress. Further, he suggests that the malnutrition evidenced in the later stages of the disease perpetuate the amenorrhea, but that it is not the primary cause.

Leibowitz and Klein (1979), examined the role of the noradrenergic system in stimulating appetite and body weight gain. Results indicated the possibility of this neurochemical system's link to symptoms of anorexia nervosa. This was supported by evidence that a decrease in medial hypothalamic noradrenergic activation produces a variety of events similar to those observed in anorexic patients, such as restriction of food intake, decrease in body weight, rate of eating, and insulin responsiveness. Additionally, deprivation-induced eating, increase in fluid intake and urine output, a disturbed pattern of eating, and hyperactivity, are all found to be symptoms in animals with a decrease in medial hypothalamic noradrenergic activation. This proposal is also supported by evidence that individuals with anorexia, particularly those below normal weight, demonstrate a significant decline of catecholamine levels or metabolites in urine plasma and cerebrospinal fluid. Additionally, Garfinkel and Kaplan (1985) have hypothesized that low levels of brain serotonin (5-HT) may be one possible explanation for the self-perpetuating biologic syndrome that develops. These theories do not appear to be able to account for or explain, however, all the clinical features of the disorder or why it affects certain selected groups (DiNicola, 1990).

Genetic theory of the etiology of anorexia

Psychogenetic theory examines the concept that the propensity for anorexia may be genetically determined. Through the study of newborn animals, it has been established that complex behavior patterns can be inherited. In humans, however, the relationship between what is inherited, learned, and what is in response to the environment is more complex. Psychiatric disorders are not as readily defined as medical illnesses, and the complex interaction between environmental stress and biological vulnerability further complicates investigation into the etiology of anorexia (Holland, Sicotte, & Treasure, 1988).

There are, however, consistent findings which link anorexia to underlying pathology. Studies in psychiatric genetics suggest that up to 80% of the variance in liability to anorexia nervosa may be accounted for by genetic factors (Holland, et al., 1988). Another study (Cantwell, Sturzenburg, Burroughs, Salkin, & Green, 1977) has discovered that over 50% of the mothers of anorectics had a history of depression. Family studies have also demonstrated a higher incidence of anorexia among first and second degree relatives of anorexic patients, and a higher incidence of anorexia among monozygotic twins than expected without a genetic explanation (Nagel and Jones, 1992). While theories such as these provide additional information as to what might be inherited, they are not conclusive.

Anorexia nervosa as an affective disorder

The aforementioned work of Cantwell et al. in 1977 posed the possibility that anorexia might be an affective disorder. Since that time, researchers have responded by studying the relationship between eating disorders and affective disorders. Evidence that anorexia nervosa is related to underlying affective disorder comes from varying sources. First, there is an increased prevalence of depressed mood and depressive syndromes in patients with eating disorders. In fact, antidepressants are the most frequently prescribed psychotropic medication when treating anorexia (Nagel and Jones, 1992), although other medications such as neuroleptics and appetite stimulants are used with increasing frequency (Pryor, McGilley, & Roach, 1990). Some would argue (Garfinkel, Garner, & Goldbloom, 1987) that common responses to pharmacological treatment point to similar physiological processes in anorexia and the affective disorders. In a recent study by Halmi et al. (1991), 84% of the entire patient population of anorectics studied had a lifetime diagnosis of some kind of affective disorder. Sixty-eight percent of these same patients had a lifetime diagnosis of major depression. Similarly, Hudson and Pope

(1990) found that 81% of restrictor anorexics had a history of an affective disorder during their lifetime. These rates are considerably higher than earlier studies by Toner, Garfinkel & Garner, (1988) which showed 36%, and Laessle, Kittl, Fitcher, Wittchen, & Pirke (1987), which was 38%.

Dissenting opinions are issued, however, as to whether anorexia and the affective disorders share a common diathesis (Atwood, 1988). Along the same vein, it has also been argued that anorexia is a mere variant of an affective disorder (Gwirtsman & Gerner, 1981). Strober and Katz (1987) cautioned that either conclusion might be premature, and that further differentiating the features of eating disorders was important before any conclusion regarding etiology could be made. Additionally, Garfinkel et al. (1987) caution that the diagnosis of depressive syndromes in eating disorder patients may be confounded by the effects of starvation and nutritional chaos. DiNicola (1990) also warns that depression is commonly associated with many medical problems and does not necessarily warrant the diagnosis of a mood disorder. He concludes that, although from 25% to 75% of patients may exhibit symptoms of both affective and eating disorders, anorexia is not a mood disorder and that a coherent model for the relationship between the two remains to be found.

Psychological theories of the etiology of anorexia nervosa

Casper (1990) contends that the contribution of the personality to the development of anorexia nervosa is difficult to establish. She explains that the opportunity to study the individual before the onset of the disorder is minimal, and that retrospective reconstruction of the premorbid personality is unreliable.

Early efforts to explain anorexia have included the psychodynamic approach. Psychodynamic theorists conceptualize the etiology and treatment of the

psychophysiological disorders as they would the neuroses. Thus, etiology is concerned with anxiety, defense mechanisms, and trauma at various psychosexual stages (Atwood, 1988). Classic psychodynamic theory holds that rejection of eating and the mature body image is associated with the rejection of sexuality and psychosocial development. In this light, anorexia is seen as a a regression to an infantile level of coping (Waller, Kaufman, and Deutsch, 1940). More recently, object relations theory postulates that the emergence of anorexic symptoms at various stages of development can be understood in terms of residual influence from earlier experiences (Mahler, 1968; Masterson, 1978).

The importance of maladaptive thinking in the development and maintenance of anorexia is well-documented (Bruch, 1973; Fairburn, 1985; Garner and Bemis, 1982, 1985). The distortion of thought about the self and interpretation of external cues have lent credence to a cognitive conceptualization of anorexia. It is postulated that an avoidance mechanism operates as negative reinforcement in maintaining the anorexic behavior. The anorectic experiences a removal of an unpleasant emotional state, such as anxiety, when engaging in certain eating disordered behaviors. This is seen in the anorectic's rigid and stereotyped behavior in regard to food and expectations of self. This avoidant behavior is thought to make the individual's symptoms highly resistant to extinction (Garner and Bemis,1982).

Family theories of etiology

Although some individual hypotheses speak to the developing child, a broader view of anorexia places the disorder within the context of the family and observed interactional patterns. Research that emphasizes these factors address disturbed patterns of family interaction. The individual's role in the family is emphasized, and the part that family pathology plays in maintaining the symptoms in the anorectic. Anorexia

is not seen so much as individual pathology then, but a manifestation of the family system's dysfunction. Long term success and recovery are facilitated by reorganization of this maladaptive interaction. Minuchin, Roseman, & Baker (1978) described family interaction patterns in anorexic and related eating disorder families. Patterns of dysfunctional interaction include rigidity, lack of conflict resolution, overprotectiveness, enmeshment, and the part the patient and symptoms play in parental conflict. Weight loss can assume, then, a functional role within a disturbed family. Palazzoli found that poor conflict resolution, covert alliance of family members, blame shifting, and mixed communication signals were characteristic of anorexic families (DiNicola, 1990). Bruch (1973, 1978) portrayed anorexia as a struggle for differentiation, identity, and self-respect within the context of the family. In the same light, Arthur Crisp views it as 'adolescence avoided', or a fear of gaining weight and maturation. Psychobiological changes during puberty are seen as triggering events, with the anorexic symptomatology detouring familial conflict (Crisp, 1981, DiNicola, 1990).

Sociocultural theories of etiology

There are compelling features of anorexia that have required an even larger arena in which to explain them. Anorexia, then, is seen as a condition and conceptualized in terms of its various social and cultural meanings. Turning from clinical explanations to a more sociological approach, Turner (1990) views illness "as a symbol not only of disorders in the patient but as metaphors of social arrangements which have gone awry" (p.159). He views anorexia in terms of familial interaction within a society that place emphasis on individual competition. Being sick involves membership to a private social community and a departure from the larger community of the healthy.

Others see the pursuit of thinness as having etiological significance in the development of anorexia (Garner & Garfinkel, 1980; Garner, Garfinkel, Schwartz, & Thompson, 1980; Mazur, 1986). The ideal body shape and size have varied over time and across cultures. It is hypothesized that the relatively recent cultural expectation for thinness in Western societies may give rise to greater expressions of eating disorders in vulnerable individuals. Additionally, it is believed that there is increased pressure on women to assume a wider range of roles in society. Although this is seen as a desirable transition, the shift toward vocational achievement may pose adjustment problems for some women (Garner & Garfinkel, 1980). Garner & Garfinkel also describe other sociocultural factors thought to be critical to the development of anorexia. They cite Boskind-Lodahl's work in viewing anorexic symptoms as a reflection of contemporary women's attempt to please others, validating their own self-worth by controlling their appearance, and Bruch's description of anorexia as the struggle to live up to perfectionistic standards.

Lastly, social learning theory speaks to attention and reinforcement as causitve factors in anorexia. This viewpoint addresses adolescence and early attempts at weight loss. Various precipitating factors initiate attempts at weight reduction, and the young individual receives considerable attention and reinforcement for this effort. Later, if the condition becomes more serious, the person gains even more attention and becomes the focus of familial concern as parents seek intervention. Additionally, parents who model a preoccupation with the pursuit of thinness are thought to have tremendous influence on the child (Bemis, 1978).

Mulidimensional/biopsychosocial approach to etiology

Turner (1990) argued that existing explanations as to the etiology of anorexia have been unidimensional. He explains that anorexia is complex and requires a

multidisciplinary perspective to understand its various levels. Similarly, Tolstrup, (1990) purports that each of the different theories have their own value, depending on the individual case. He stressed that none of the etiological theories provide a satisfactory explanation that has universal validity and that can be applied generally to all cases of anorexia.

Coming into prominence is a more multidimensional approach to etiology and treatment. Although it is widely held that there is no proven cause for anorexia (Herzog, Keller, & Lavori, 1988, Herzog, Keller, Sacks, Yeh, & Lavori, 1992; Herzog et al., 1993; Garfinkel, Garner, & Goldbloom, 1987), most of the evidence suggests that the disorder is multidetermined (Garner & Garfinkel, 1980). Drawing on past researchers' efforts to explain the disorder, Garner and Garfinkel have suggested the possibility of interconnecting relationships between various predisposing, precipitating, and perpetuating factors in the development and maintenance of anorexia. They further hypothesize that many anorectics have an individual, family, or cultural predisposition and that these antecedents become pathogenic within the context of stressors. This eventuates in dieting, weight loss, and the relentless pursuit of thinness.

Definition and Description of Anorexia Nervosa

The historical overview demonstrated how present understanding of anorexia nervosa is the culmination of an evolutionary process. The concept of anorexia has undergone many changes. Describing and defining it is oftentimes problematic, as anorexia is both a syndrome and a symptom (Fairburn, 1985). Most definitions of anorexia also include a statement calling for differential diagnosis between the syndrome and other known medical illnesses or psychiatric disturbances which may be primary. Its value, then, would include its usefulness in assisting to rule out other illnesses.

Until 1979, many definitions of anorexia also included criteria for bulimia. Interfacing the two in standard definitions, many studies of anorexia before this time also included bulimic symptoms in their subjects. Various diagnostic criteria for anorexia have been developed for the clinician and for use in research (Garfinkel & Garner, 1982). The diagnostic criteria used in many studies are often incomplete or inadequately described. Additionally, a review of studies found that some researchers defined their own operational criteria for anorexia and related eating disorders, using varying growth charts and symptom patterns (Casper, et al.,1979; Crisp, 1981; Feighner, et al., 1972; Halmi, Goldberg, Casper, Eckert, & Davis, 1979; Hsu, 1980). Comparison between findings are difficult, since patients with varying symptomatology were used (Steinhausen & Glanville, 1983; Herzog, Keller, & Lavori, 1988; Herzog, et al., 1993).

One commonly used definition of anorexia nervosa that was employed in research was formulated by Feighner, et al. (1972). Despite criticism (Steinhausen & Glanville, 1983), it was thought by many to describe diagnostic criteria relevant to anorexia as a syndrome, clinical practice, and research (Casper, 1990; Garner & Garfinkel, 1980; Garner, Olmstead & Polivy, 1983; Hsu, 1980; Schwartz & Thompson, 1981; Steinhausen & Glanville, 1983; Steinhausen, Rauss-Mason & Seidel, 1991). Modifications of the Feighner et al. (1972) criteria have also been used for various diagnostic purposes (Garfinkel & Garner, 1982). Feighner's (1972) original criteria is as follows:

1. Onset before 25 years of age.
2. Anorexia with accompanying loss of at least 25% of the original body weight.

3. A distorted, implacable attitude toward eating, food or weight, which overrides hunger, admonitions, reassurance, and threats--for example; (a) denial of illness, with a failure to recognize nutritional needs, (b) apparent enjoyment in losing weight, with overt manifestation that food refusal is a pleasurable indulgence, (c) a desired body image of extreme thinness, with overt evidence that it is rewarding to the patient to achieve and maintain this state, (d) unusual hoarding or handling of food.
4. No known medical illness that could account for the anorexia and weight loss.
5. No other known psychiatric disorder, with particular reference to primary affective disorders, schizophrenia, obsessive-compulsive disorder, and phobic neuroses (it is assumed that even thought it may appear phobic or obsessional, food refusal alone is not sufficient to qualify for obsessive/compulsive or phobic disease).
6. At least two of the following manifestations:
   (a) amenorrhea; (b) lanugo; (c) bradycardia;
   (d) period of overactivity; (e) episodes of bulimia;
   (f) vomiting (may be self-induced). (p. 61).

The various etiological theories for anorexia were reviewed previously. As mentioned, the development of eating disorders as distinct clinical entities was a gradual process. In the late 1970's and early 1980's, the trend toward an atheoretical

description of eating disorders based on empirical validation of symptom clusters began. The criteria established by the American Psychiatric Association Task Force on Nomenclature for the Diagnostic and Statistical Manual for Mental Disorders, Third Edition (1980) for anorexia nervosa was as follows:

Diagnostic criteria for anorexia nervosa (DSM-III)

A. Intense fear of becoming obese, which does not diminish as weight loss progresses.

B. Disturbance of body image, e.g., claiming to "feel fat" when emaciated.

C. Weight loss of at least 25% of original body weight, or if under 18 years of age, weight loss from original body weight plus projected weight gain expected from growth charts may be combined to make the 25%.

D. Refusal to maintain body weight over a minimal normal weight for age and height.

E. No known physical illness that would account for the weight loss (p. 67)

In 1987, with the publication of the Diagnostic and Statistical Manual for Mental Disorders III-Revised (DSM-III-R), the diagnostic criteria for both anorexia nervosa and bulimia (now called called bulimia nervosa) changed. Bulimia has emerged as a related, but separate, diagnostic entity. The diagnostic criteria for anorexia nervosa has been defined in the DSM-II-R:

Diagnostic Criteria for Anorexia Nervosa (DSM-III-R)

A. Refusal to maintain body weight over a minimal

normal weight for age and height, e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during period of growth leading to body weight 15% below that expected.

B. Intense fear of gain weight, or becoming fat, even though underweight.

C. 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 obviously underweight.

D. In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration) (p.69).

The diagnostic criteria for anorexia nervosa in the Diagnostic and Statistical Manual for Mental Disorders (fourth edition) (1994) are as follows:

A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less that 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less that 85% of that expected).

B. Intense fear of gain weight or becoming fat, even though

underweight.

C. Disturbance in the way in which one's body weight or shape is experienced; undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the the current low body weight.

D. In post-menarchal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)

Specify type:

Restricting type: During the episode of Anorexia Nervosa, the person does not regularly engage in binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives or diuretics)

Binge Eating/Purging type: During the episode of Anorexia nervosa, the person regularly engages in binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives or diuretics) (pp. 544-545).

Clinical Features of anorexia nervosa

Behavioral: Unusual behavior associated with food is common. For example, individuals are often known to cook meals but refuse to eat them, or avoid eating in the presence of others. Hoarding and concealing food are sometimes accompanied by secretive isolated meals, which may be candy or foods high in carbohydrates. Crumbling and/or throwing away unconsumed foods is also seen. Excessive exercising, often ritualized and compulsive in nature, is characteristic. Constant preoccupation with

weighing and viewing the body is common. Laxative and diuretic abuse and compulsive stealing of candy or laxatives has been observed in some types of anorexia. Socially, individuals have been known to present as more immature or regressed in their patterns of behavior. Usually, there is a markedly decreased interest in sexual relations, a heightened dependency on parents, and an almost overcompliance with parental wishes, with the exception of food intake (Fairburn, 1985; Garner & Bemis, 1985; Waltos, 1986).

Psychological: A fear of fatness and weight gain preoccupy the individual's thinking (Crisp, 1980; Garfinkel & Garner, 1982; Herzog et al., 1993; Morgan & Hayward, 1988; Morgan & Russell, 1975). Some type of denial of the illness is not uncommon as is an overestimation of the body's size. This perceptual distortion can be quite delusional. Research offers various explanations as to this phenomenon; however, its significance in anorexia appears to be unclear (Bruch, 1978; Button, Fransella, & Slade, 1977; Casper, Halmi, Goldberg, Eckert, & Davis, 1979; Crisp & Kalucy, 1974; Giles, 1985). Bruch (1978) also describes a paralyzing sense of ineffectiveness, or behaving only in response to the demands of others and in exclusion of their own needs and wishes. This feeling of lack of control is characteristically masked by negativism and defiance, making therapeutic intervention difficult. Various types of anorexic patients, including some nonchronics, have been described as obsessional, overcontrolled, introverted, socially anxious, conscientious, perfectionistic, competitive, and socially dependent (Garfinkel & Garner, 1982; Strober, 1980). Other researchers (Morgan & Russell, 1975) have observed normal personality development in some patients.

Medical: The anorectic has a marked loss of fat tissue, giving the individual a gaunt appearance. It is also possible that urination may increase, heart rate and respiration are slower, and blood pressure may drop. In some severe cases, body temperature drops drastically, and the patient develops edema and lanugo. Hormonal changes take place, resulting in amenorrhea. Other hormonal changes that take place are lowered amounts of thyroid hormones, elevated growth hormone levels, and decreased testosterone in males. Other possible complications include anemia, lowered white cell count, and abnormal liver function.

Methods used to cause weight loss can also lead to complications. Vomiting, laxative use, and other purgative methods can result in lowered potassium levels. Lowered potassium levels leading to metabolic imbalance can result in cardiac arrhythmias and arrest, seizures, tetany, and peripheral neuropathy. Indeed, it is not uncommon to encounter abnormal electrocardiogram and electroencephalogram test results with these patients. Laxative abuse can also result in chronic constipation, diarrhea, and discomfort. Individuals who purge may also experience decay and dental complications due to the acid eroding the tooth enamel (Waltos, 1986).

Epidemiology

The age of onset of anorexia is typically described as being from late adolescence to the early thirties, with the ages of 12 to 18 being identified as the high risk group (American Psychiatric Association, 1980). Anorexia occurs predominantly in females (90% to 95%) , and was thought to be more common in middle and upper classes (American Psychiatric Association, 1992; Garfinkel & Garner, 1982; Halmi, 1974; Hsu, 1989). Bruch (1973; 1978), however, noticed that anorexia has become more widespread through the social class structure and encompasses a wider age group. It also appears to be more commonplace in professions that emphasize low weight such as

models and ballet dancers (Garfinkel, & Garner, 1982; Garner & Garfinkel, 1980; Waltos, 1986). Additionally, homosexual men may be at greater risk than heterosexual men (Herzog, Newman, & Warshaw, 1991). The prevalence is on the increase, and estimations range from 1% of adolescent girls (Waltos, 1986) to 1 in 250 between the ages of 12 and 18 (American Psychiatric Association, 1987). From 8% to 12% of college women may experience a disturbance in eating (Garner & Garfinkel, 1980; Raciti & Norcross, 1987), but the distinction between exhibiting eating disorder behavior and having a clinical diagnosis is unclear in the literature. It has been also been shown previously that the possibility of hereditary transmission of anorexia has been demonstrated by the higher rate of occurrence in twins. Additionally, 16% of mothers and 23% of fathers of anorectic patients had a history of low weight in adolescence.

The natural course of anorexia varies. Research suggests that 15% (Ratnasuriya et al., 1991) develop bulimia. The bulk of the research, however, put the numbers that cross over at closer to 50% (Casper, Eckert, Halmi, Goldberg, & Davis, 1980; Herzog, et al., 1992). Additionally, there may be spontaneous recovery from anorexia without treatment, recovery with weight gain and episodes of relapse, chronic forms that do not remit, and death. Earlier mortality rates were thought to be approximately 15% to 21% (American Psychiatric Association, 1980), but some studies now report 0 to 2% mortality rates (Waltos, 1986). Crisp (1981) states that the natural course of the illness will find about 5% dead six years after their initial presentation to a treatment clinic. He also posed that there are many cases that do not seek treatment, and many again that may seek treatment but who are misdiagnosed. The natural course of the illness and mortality rates are not known for this group. Unfortunately, research that

investigated long term outcome (Ratnasuriya, Eisler, Szmukler, & Russell, 1991) found that after 20 years, almost 40% of the patients were still gravely incapacitated by the illness. Deaths attributable to anorexia nervosa rose to 15% by the end of the 20 year period.

Differential diagnosis and psychiatric comorbidity

The differential diagnosis include both psychiatric and medical disorders. History, mental status examination, and laboratory evaluations assist in refining the diagnosis. Medical illnesses include gastrointestinal (malabsorption, ulcers, irritable bowel syndromes), endocrine (hyperthyroidism, diabetes), and central nervous system pathology. A psychiatric illness that may be confused with anorexia is depression with weight loss. The two syndromes can co-exist, in which case both diagnoses should be made. Somatization disorders usually do not have the fear of fatness, and schizophrenia is easy to discern due to impaired reality testing in other spheres. Bulimia, characterized by bingeing and vomiting, is recognized as a separate syndrome, although it can also co-exist with anorexia. Associated features of the two disorders are so similar that both should always be considered. Lastly, psychogenic emesis or drug use should be considered (Waltos, 1986).

Psychiatric comorbidity investigations have linked anorexia to major depression, obsessive-compulsive disorder and personality disorder. Comorbid major depression in patients with anorexia ranges from 36% to 81%. Obsessive compulsive features have also been associated with anorexia, but it is not clear what proportions of anorectics would be dually diagnosed. Prevalence rates of concomitant personality disorder in anorexic individuals range from 33.3% to 80% (Halmi, et al.,1991; Herzog et al., 1992).

Assessment of eating disorders

A critical component of a treatment program is the initial intake assessment. Referrals to eating disorder treatment programs come from physicians, nurses, mental health professionals, employee assistance programs, family, teachers, and friends. There is an initial call to make the appointment and an intake interview is made. There is usually some presenting concern with food, eating patterns, or weight. The initial appointment usually consists of a diagnostic interview with the patient. If the individual is a minor, the parents will be interviewed as well. The patient is also given a standard battery of psychological instruments that include surveys to gather demographic and symptom information. Thorough evaluation will also rule out any complicating medical condition and assess the need for psychopharmacologic intervention (Johnson, 1985).

Denial of illness

Patients with anorexia often minimize their disordered eating and related problems; some deny their symptoms altogether. Additionally, it is not uncommon for patients and their families to resist the notion of psychiatric treatment and hospitalization. It is believed that individuals with anorexia fall on a continuum. There are those who will refuse intervention, others who will see their family physician only, and those who are sidetracked to other professionals such as gynecologists. On the other end are those who willingly seek out competent, specialized care in a psychiatric hospital or clinic (Morgan & Russell, 1975).

There is very little information or research as to the anorectic's denial of their illness. Crisp (1967) addressed this in relationship to weight phobia. The phobia itself is sometimes denied, but almost always revealed in the treatment effort aimed at the restoration of the full amount of weight. Crisp believed that this phenomenon has its origin in the patient's need and ability to deny, both physiologically and psychologically,

the emotional distress associated with pubertal maturation. In this light, denial is seen as a defense against change and a form of resistance. This resistance, then, is viewed as a response to a perceived threat and denial of illness is understood as a protective psychological maneuver.

Anorexic patients have been found to experience a lesser degree of trust in interpersonal relationships (Garner, Olmsted, & Polivy, 1983), and are thus likely to refuse offers of help from an outsider or stranger. Fear of vulnerability to a stranger's reality and possible value judgment is common. This refusal of help is seen indirectly via the denial of illness or the pretense of compliance. Similarly, Hilde Bruch (1978, 1981) views the anorectic's denial as a form of embarrassment over being viewed as having a problem and being unable to solve their own difficulties. She describes the paralyzing sense of ineffectiveness the individual feels, and the misuse of the eating function to cope and solve the problems of living. Bruch (1985) also speaks to this denial within the context of the therapeutic alliance. She conceptualizes that the therapy process with the anorectic includes the re-evaluation of the family's interaction. Processes that have interfered with the patient's normal development can be addressed and enmeshed ties with the parents loosened. Patients are often reluctant to engage in this type of therapy. They not only deny their illness and any need for treatment, they deny that there is any difficulty with the parents. Oftentimes their only complaint involves their parents' interference with their eating behavior and making arrangements for treatment. Others will present to treatment and endlessly criticize their parents.

Vanderdeycken and Vanderlinden (1983) address the literature on anorexia and speak to the professionals who have suggested that some anorexic patients should be

included in the group of "overprivileged manipulators, liars, and cheaters who are abusing medical attention". They discuss the frustration and outrage in professionals who view anorectics as impostors because they are not perceived as having a genuine illness, refuse to cooperate in treatment, and deliberately harm themselves. The authors believe that whether or not the anorectic's symptoms are conscious or deliberate is closely associate with the denial of illness or "blissful indifference". Although denial of illness is not an uncommon characteristic of the anorectic, Vanderdeycken and Vanderlinden believe that this aspect appears to be overlooked in the literature, especially in the attempt to more objectively evaluate the clinical features of the illness.

Casper, Halmi, Goldberg, Eckert, & Davis (1979), in their research on body image, found that the degree of body image disturbance was related to the severity of the illness. They also found that there was a strong relationship between denial of the seriousness of the illness and body image distortion, and that this association might be important as a predictor of weight gain. Giles (1985) research with anorexia patients suggested that difficulties with body image were due to a denial of the illness itself, instead of perceptual disorder. Garner and Bemis (1982) suggest that the anorectic cannot realistic assess their own condition due to cognitive distortion. Denial manifests itself in the distrust of treatment outcome, with the patient believing that the treatment purpose is to fatten them or to make them submit to the wishes of others.

Norring (1990) investigated the stability of the associations between the EDI and other diagnostic dimensions reflecting eating disordered symptomatology and ego functioning. Using an *n* of 37, Norring concluded that the EDI is an instrument that has use as a descriptor of the present state of the patient. He also issued a warning that, as is the case when using other self-report measures, denial of illness could influence the results. He offered that his small sample of patients was not dissimilar to other samples

that might be used in research or any other sample of eating disordered patients. He concluded that his sample was not likely to have been influenced to a more or lesser degree than others with anorexia (and therefore not threatening the conclusions of his study). He was unclear, however, as how to address this problem. Although he did not compare eating disordered patients with a non-eating disordered group, he did conclude that the denial of illness aspect might be problematic when using the EDI.

Halmi et al. (1979) examined the relationship of selected pretreatment characteristics to weight gain during an inpatient treatment stay of 35 days. They found prognostic indicators correlating positively with weight gain to be no previous hospitalizations for anorexia, a great amount of overactivity before treatment, less psychosexual immaturity, admission to feeling hunger, and less denial of illness. Halmi et al. used the Anorectic Attitude Scale to assess denial of illness, proclaimed loss of appetite and psychosexual immaturity. The authors believe that these represent the common factor of denial, which was shown to be negatively correlated with weight gain.

Lastly, Vanderdeycken and Vanderlinden (1983) examine the relationship between denial of illness and the use of self-reporting measures in anorexic patients. They used 40 hospitalized anorexic patients, most of them having severe cases. The authors utilized the Eating Attitudes Test (EAT), the Amsterdam Biographic Questionnaire (ABV), and the Minnesota Multiphasic Personality Inventory (MMPI). The results of the EAT were remarkably heterogeneous, ranging from high "pathologic" scores (the "admitters") to low seemingly "normal" scores (the "deniers"). Thirteen of the 40 patients had "normal" EAT scores. As they were known to have severe cases of anorexia, they were called the "deniers". These "deniers" were more socially extraverted on the ABV, whereas their validity scales on the MMPI *were within the*

normal range. The deniers also showed less psychopathological disturbance on the clinical scales as opposed to the "admitters". Results indicated the higher the EAT score, the more pathologic the MMPI clinical profile, with elevation of both the neurotic and psychotic scales in the "admitters".

Outcome studies of anorexia nervosa

In 1975, Morgan and Russell stated that an accurate prediction of eventual outcome of anorexia nervosa is almost impossible. Since then, much has been learned about the clinical features and general understanding of individuals with anorexia and related eating disorders. Unfortunately, much of the information in the studies that have investigated prognostic indicators and course of outcome is contradictory. There are numerous examples. For instance, Hsu (1980) found 17 factors that were predictive of outcome for individuals with anorexia. In a recent review of a large number of outcome studies over of years, however, Herzog, Keller, & Lavori (1988) state that many of the factors that were assessed for predictive significance in these studies have proven to be inconclusive. Examples of these are age at onset of illness, bulimic episodes, social adjustment, comorbid psychiatric disorder, and marital status. Although the literature on prognostic indicators and outcome has been shown to be inconsistent and inconclusive, Herzog et al. (1993) did find that several factors across studies have been shown to be predictive of poor outcome in anorexia. These are longer duration of illness, concomitant personality disorders, disturbed parent-child relationships, and the presence of vomiting. To counter this, Ratnasuriya et al. (1991), in a retrospective case note investigation of a large number of outcome studies, conclude that age of onset of the illness as a predictor of outcome appeared consistent across studies. Ratnasuriya et al. (1991) also point to several studies, however, that make strong arguments that early onset as a predictor of good prognosis is inconclusive. And

lastly, in the most recent review of studies of outcome and predictors, Herzog (1993) states that, "to date, no single factor has been found to be consistently predictive of outcome" (p. 835).

It is clear that researchers appear to hold divergent views about the prognosis and outcome of anorexia. It is not clear as to what extent this is attributable to differences in methodology or other to factors. Making comparisons among these outcome studies is difficult, because they differ in diagnostic criteria, outcome criteria, and length of follow-up. Many of the studies have failed to use standardized measures (Herzog et al., 1988, 1993; Morgan & Russell, 1975). Other researchers (Tolstrup, 1990) address the difficulties in accessing the anorectic in sufficient numbers due to their rare clinical presentation and the characteristically high drop-out rates (Herzog et al.,1993).

Summary of the Literature Review

It has been shown that, through the course of history, anorexia nervosa has undergone various descriptive and ideologic changes. As the concept of eating disorders has become further refined, anorexia nervosa has emerged as a distinct clinical and diagnostic entity.

It has also been demonstrated that, to date, no single causative agent has been identified. Working hypotheses were reviewed, however, as to their utility in certain cases. Biological causes were examined, addressing the research on identified neurotransmitters and the endocrine regulation of eating and weight control. Other theories reviewed included the notion of genetic predisposition and anorexia's link to the affective disorders. Psychological theories speak to the contribution of an individual's personality, thinking, and development. Family theories attempt to explain anorexia within the context of disturbed patterns of family interaction. Other theories place

anorexia within an even larger arena and look to the various social and cultural meanings such as membership in a sick community and the societal pressure to achieve an ideal body shape. Learning theory stresses unhealthy behavior that is reinforced and made part of an individual's repertoire of coping skills. A multidimensional approach to anorexia was also reviewed, addressing the various levels and interconnecting relationships thought to be responsible for the disorder.

The evolution of the diagnosis and clinical picture of anorexia was reviewed. Anorexia is now thought to be characterized by a preoccupation and manipulation of food and body size and a refusal to maintain a healthy weight. The literature also spoke to the variation in the course of the illness, the heterogeneity of the population that presents, the increase in prevalence, and the incapacitating nature of the illness.

It was suggested in the literature that the initial consultation and assessment for anorexia can be a critical time. Because of the nature of the illness, efforts to engage the patient and family at this time may be difficult. Denial and the resistant nature of the illness was reviewed. Denial is seen as adolescence avoided and defensive posturing; as cognitive distortion; as a fear of vulnerability to outside inquiry, intervention, and embarrassment; as fear of disrupting the familiar family system; and as a form of malingering.

It would appear that there is a paucity of empirical research in the area of denial of illness as it relates to anorexia nervosa. Results of studies suggest that there is a strong relationship between the denial of illness in anorexia and body image distortion; that less denial of illness is associated with weight gain; and that those who denied eating disorder symptomatology on a given inventory did not have abnormal test-taking attitudes on another personality inventory.

Additionally, much of the data in the studies of the outcome of the illness are contradictory and inconclusive. To date, there is no single factor that appears to be consistently predictive of outcome. The literature also suggests that, although important, the area of denial of the illness has been overlooked.

Research Hypotheses

Following a review of the relevant literature related to eating disorders, it is hypothesized that:

1. Deniers will have lower percentage of Ideal Body Weight at presentation to treatment, will have poorer outcome after one year, will have had a shorter duration of symptoms, will have had an earlier onset of the disorder than admitters and will be less likely to stay in treatment than admitters.
2. Deniers will be less likely than admitters to have had previous treatment for the disorder.

CHAPTER III

METHODOLOGY

This chapter presents a discussion and description of the procedures and methods involved in the study. Subject selection, instrumentation, and data collection procedures are detailed. The procedures for statistical analysis are presented. The chapter is divided into the following: subjects, instrumentation, procedures, hypotheses, the research design and statistical analysis of the data.

Subjects

Subjects for this study were drawn from the general population of patients that have presented to a clinic that specializes in the treatment of eating disorders. Psychiatry and psychology staff at the clinic are employees of a state medical school in the midwest region of the United States. The clinic itself is housed in an outpatient setting next to a private psychiatric hospital. The eating disorder clinic is associated with the hospital through contracts with the medical school. The eating disorder program at the clinic serves a large catchment area and occasionally draws from surrounding states as well. It offers comprehensive services including thorough assessment and evaluation, education, individual and group therapy, inpatient treatment, consultation, outreach, referral, and is a component of the medical school's predoctoral internship program.

As part of the standard intake process, individuals who present to the clinic are given a battery of tests that have included some combination of the following: the Minnesota Multiphasic Personality Inventory (MMPI), the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), the Beck Depression Inventory (BDI), the Eating Disorder Inventory (EDI), the Eating Disorder Inventory 2 (EDI-2), the Bulimia and

Related Eating Disorders Screen, the Millon Adolescent Personality Inventory (MAPI), the Millon Clinical Multiaxial Inventory (MCMI), the Millon Clinical Multiaxial Inventory-II (MCMI-II), and the Multidimsional Personality Questionnaire (MPQ).

Subjects were selected from those who have presented to the clinic and who have completed the intake process, which has included thorough psychological and psychiatric evaluation. Forty-one patients were selected who have obtained a denial profile on the EDI or the EDI-2 that does not accurately reflect their presenting eating disordered symptomatology, and that is below the range of clinical significance for eating disorders. In all cases selected, there was clear corroborative evidence from referring physicians and other professionals, relatives, friends, and laboratory results that confirm an eating disorder. For the purpose of this study, the individuals and their profiles selected are limited to those with anorexia nervosa as defined by the DSM-IV. Both restrictor and binge eating/purging subtypes were used.

Additionally, 69 patients who presented with anorexia were included. This second group did not obtain the denial profile, rather, their EDI-2 scores were within the range of clinical significance for eating disorders.

Deniers mean age at intake was 21.3 years $\pm$ 9.2; admitters had a mean age of 22.9 years $\pm$ 8.6. Deniers had a mean age of onset of menses of 12.7 years $\pm$ 1.5; admitters' mean age of menarche was 12.7 years $\pm$ 1.6. Deniers had a mean height of 63.8 inches $\pm$ 3.0; admitters had a mean height of 64.5 inches $\pm$ 3.1. These data are represented in Table 1.

Data collected for marital status showed 2.4% of the deniers were divorced versus 5.8% of the admitters; 24.4% of the deniers were married versus 26.1% of the admitters; 73.2% of the deniers were single and 66.7% of the admitters; there were no widowed deniers, but 1.4% of the admitters had lost their spouse.

Table 1

Age at Intake, Age of Menarche, and Height for Deniers and Admitters

	Deniers (*N* = *41*)		Admitters (*N* = *69*)	
	Mean	SD	Mean	SD
Age at Intake	21.3	9.2	22.9	8.6
Age of Menarche	12.7	1.5	12.7	1.6
Height	63.8	3.0	64.5	3.1

Information as to birth order is as follows: 19.5% of the deniers were the first-born in their family; 29.0% of the admitters were the oldest. Middle children represented 26.8% of the deniers; 27.5% of the admitters were middle children. Thirty-nine percent of the deniers were the youngest in the family; 37.7% of the admitters were the last born. Seven point three percent of deniers were only children, while 4.3% of admitters were only children. The birth order was unknown for 7.3% of the deniers and 1.4% of the admitters. Data for marital status and birth order are represented in Table 2.

Data collected on the educational levels of the two groups found 51.2% of the denier group to still be in elementary school or had not yet completed high school; 26.1% of the admitters were at this level. There were no deniers who had obtained a GED, but 4.3% of the admitters had earned this level. Information on deniers showed that 29.3% had a high school diploma (only), while the admitters had 42.0%. Deniers had no one with a two year college degree (only), but admitters had 2.9% achieve this level. Seventeen point one percent of the deniers reported vocational or business

Table 2

Marital Status and Birth Order by Deniers and Admitters

	Deniers (*N* = *41*)	Admitters (*N* = *69*)
Marital Status	Percent	
Divorced	2.4	5.8
Married	24.4	26.1
Single	73.2	66.7
Widow	-----	1.4
	100%	100%
Birth Order		
Oldest	19.5	29.0
Middle	26.8	27.5
Youngest	39.0	37.7
Only	7.3	4.3
Unknown	7.3	1.4
	100%	100%

training after high school; 7.2% of the admitters were at this level. The deniers reported 2.4% had a four year college degree, while admitters had 11.6%. Deniers had no advanced degrees; admitters had 1.4%. Educational levels reported represented 100% of the deniers; 4.3% of the admitters' educational levels were unknown. These data are summarized in Table 3.

Table 3

Educational Levels by Deniers and Admitters

	Deniers (*N* = *41*)	Admitters (*N* = *69*)
Educational Levels	Percent	
Elementary	51.2	26.1
GED	- - - -	4.3
High School Diploma	29.3	42.0
2 Year College Degree	- - - -	2.9
Vocational or Business	17.1	7.2
4 Year College Degree	2.4	11.6
Advanced Degree	- - - -	1.4
Unknown	- - - -	4.3
	100%	100%

Data on occupational earnings were collected and represent the patient only. The socioeconomic status of the entire family was not collected or considered. Information obtained placed them in 'low', 'middle', or 'high' income bracket, or 'student' status. Deniers had 26.8% who reported income earnings in the low range, while admitters had 23.2% in this range. Fourteen point six percent of the deniers had income in the middle range; the admitters had 24.6% in the middle income bracket. Neither deniers nor admitters reported earnings in the high income range. Those with student status (this represents college students as well) made up 58.5% of the deniers, and 52.2% of the admitters were students. See Table 4.

Table 4

Occupational Levels by Deniers and Admitters

	Deniers (*N* = *41*)	Admitters (*N* = *69*)
Occupational Levels	Percent	
Low income	26.8	23.2
Middle income	14.6	24.6
High income	- - - -	- - - -
Student	58.5	52.2
	100% 100%	

Table 5

Family History of Eating Disorder by Deniers and Admitters

	Deniers (*N* = *41*)	Admitters (*N* = *69*)
Family History	Percent	
Yes	24.4	29.0
No	73.2	69.6
Unknown	2.4	1.4
	100%	100%

Data were collected on whether or not there was any history of an eating disorder. Seventy-three point two percent of those in the denier group reported that there was no family history of an eating disorder; 69.6% of the admitters said no family history. Twenty-four point four percent of the deniers acknowledged a family history of an eating disorder, while 29% of the admitters did the same. Family history was not reported or unknown for 2.4% of the deniers and for 1.4% of the admitters. See Table 5, above.

Instrumentation

This study utilized the EDI, the EDI-2, and the Morgan and Russell Measure of General Outcome.

The Eating Disorder Inventory and the Eating Disorder Inventory-2

The Eating Disorder Inventory is a multiscale, self-report measure of symptoms commonly associated with anorexia nervosa and bulimia nervosa. It provides standardized subscale scores on eight dimensions that are clinically relevant to eating disorders. The inventory has 64 items presented in a six-point format that requires respondents to answer "always," "usually," "often," "sometimes," "rarely,", or "never" (Garner, 1991; Garner, Olmstead, & Polivy, 1983).

The original Eating Disorder Inventory was introduced in 1983. It had three subscales assessing attitudes and behaviors concerning eating, weight, and shape (Drive for Thinness, Bulimia, Body Dissatisfaction). It also had five subscales that addressed constructs or traits relevant to eating disorders (Ineffectiveness, Perfection, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears) (Eberly & Eberly, 1985; Garner, 1991; Garner et al., 1983).

The research for the EDI-2 is based on the original EDI. A comparison was made as to the original standardization sample and the updated sample. Comparison between EDI subscale means for each diagnostic group (restricting anorectics, bingeing

anorectics, and bulimics) and showed no significant differences in the two standardization groups. The current version of the EDI (the EDI-2) retains the original 64 items. There are 27 additional items in the new version, however, that add three new constructs that form the EDI-2 provisional subscales (Asceticism, Impulse Regulation, and Social Insecurity) (Garner, 1991).

The EDI-2 requires an item booklet, an answer sheet, and a profile form. The item book has four pages. The answer sheet is one page. Responses for each item are scored from zero to 3, with the score of 3 assigned to the responses farthest in the symptomatic direction. The profile form is designed to provide a graph of the subscale scores and a listing of percentile scores. It can be administered in individual or group settings and has been used with patients as young as 11 years of age. The provisional subscales have not been administered to or validated with younger children and are intended for adolescents 12 years of age or older. Age, sex, and diagnostic status are obtained from the patient and normative tables are provided. The author warns, that, although there are numerous studies in which EDI or the EDI-2 scores have been summed across all subscales, each subscale is intended to measure a conceptually independent trait. Summing scores across subscales, then, poses problems in interpretation (Garner, 1991).

Reliability

The EDI-2 subscales have a coefficient of internal consistency above .80 (Cronbach alpha)for an eating disorder sample. Reliability coefficients (alphas) for the original EDI subscales were between .83 and .93 for the eating disorder sample. Studies of test-retest reliability included coefficients of .79 to .95 for one week apart and all subscales above .80 for three weeks apart (Crowther, Lilly, Crawford, & Shepherd, 1992; Garner, 1991).

Validity

In the original EDI, content validity was established by a generation of a pool of 146 items by clinicians who were involved in patient care and research. Items were designed to measure 11 constructs derived from the literature on eating disorder theory. Eight of the dimensions met final reliability and validity requirements for a subscale. The EDI established criterion-related validity by being able to discriminate between patient and nonpatient samples (Garner, 1991; Garner, Olmsted, & Polivy, 1983; Hurley, Palmer, & Stretch, 1990)). Concurrent validity was established in the original validation of the EDI by comparing self-report profiles with the judgements of experienced consultants or psychotherapists familiar with the clinical presentation of the patient (Garner, 1991; Garner, Olmsted, & Polivy, 1983). Construct validity was initially difficult to establish due to the lack of other measures for this population. Later studies between the EDI and the Eating Attitudes Test (EAT) demonstrated convergent validity (Garner, 1991, Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E., 1982; Raciti & Norcross, 1987). Since the its initial validation, many other studies have suggested convergent validity for different subscales of the EDI (Garner, 1991).

For research purposes, the EDI and the EDI-2 are interchangeable (Garner, 1991). The original 64 questions of the EDI were kept in the EDI-2. The original eight scales were also kept intact (three symptoms scales and five construct or trait scales). As mentioned, the only difference, then, is the addition of the three provisional scales. The provisional scales were not used or considered for this study.

Morgan and Russell Measure of General Outcome

The Morgan-Russell Outcome Assessment Schedule was devised to assist in recording clinical information from anorexic patients. As part of this schedule, a

separate measure that can be used to assess outcome is the Morgan-Russell Measure of General Outcome, also referred to as the Morgan-Russell Scales for Anorexia Nervosa. The measure is based simply on the patient's body weight and the extent to which normal menstruation has been resumed. Three categories of outcome were defined as follows: Good outcome, or body weight that has been maintained within 15% of the average body weight according to [actuarial tables] and regular menstrual cycles; intermediate outcome, or body weight that has risen to within 15% of the average body weight, but has not been constantly sustained; and/or there are continuing menstrual disturbances; poor outcome or body weight so low that it never approaches the average body weight minus 15% level, and menstruation remaining absent or virtually absent (Morgan & Hayward, 1988; Morgan & Russell, 1975).

The Morgan and Russell Measure of General Outcome was selected as a measure of outcome for anorexia nervosa due to its common use in the literature and ease of utility. The value of these scales has been demonstrated in a number of studies of anorexia nervosa (Hsu, Crisp, & Harding, 1979; Morgan & Hayward, 1988; Morgan & Russell, 1975; Ratnasuriya, Eisler, Szmukler, & Russell, 1991; Russell, Szmukler, Dare, Eisler, 1987).

Procedures

For this study, only archival data were used. Forty-one profiles that are below clinical range of significance were selected from a group of anorectics who have presented to the eating disorder clinic. Sixty-nine profiles were selected from the population of anorectics that have profiles within the range of clinical significance. Demographic and other information was obtained from patient's files and initial testing and questionnaires, such as age of onset of illness, age at presentation to treatment, body

weight at intake and presentation to treatment, and prior treatment efforts. The relationship between the denial profile and these variables of interest was investigated.

Additionally, a period of one year after intake and presentation to treatment was used in determining the relationship between the two types of profiles and the measure of outcome. Information was obtained from patients charts and follow-up data as to the general measure of outcome described. The patients are routinely given follow-up that includes the Bulimia and Related Eating Disorders Screen and psychological testing. They are tested every six months while in therapy, and are given the follow-up packet six months after termination from treatment. Patients are then given follow-up testing on a yearly basis. The Bulimia and Related Eating Disorders Screen contains the information concerning the patient's menses and weight. The information was obtained from the instrument as the patient reported it. They were then be assigned to one the three categories of outcome, 'good', 'intermediate', and 'poor', as defined by the Morgan and Russell Scales described earlier.

This study also investigated the relationship between those eating disordered individuals and rate of treatment termination. The group of 41 patients with denial profiles and 69 patients with profiles that accurately reflect their eating disordered symptomatology were compared as to termination rates, reflected as months spent in treatment.

Null Hypotheses

1. There is no difference between groups of deniers and admitters on percentage of Ideal Body Weight at presentation to treatment, on outcome after one year as defined by the Morgan and Russell Scales, on duration of symptoms, on age of onset of the disorder, or on amount of time spent in treatment.

2. There is no difference between deniers and admitters on previous treatment experience.

Research Design and Analysis

In order to test hypothesis one, a multivariate analysis of variance (MANOVA) was set up to investigate ideal body weight at intake, outcome, duration of illness, age of onset of the illness, and length of treatment between deniers and admitters. The Type I error rate was set at .05.

In order to test hypotheses two, a chi square test of independence was used. For this hypothesis, a two-way contingency table and chi square statistic was used to examine the relationship between a test profile's inclusion into either group in relationship to whether or not they have had prior treatment experience. The Type I error rate was set at .05.

CHAPTER IV

RESULTS OF THE STUDY

INTRODUCTION

Results of the statistical analyses used to test the null hypotheses will be presented. The purpose of this study was to investigate the relationship between the two groups studied, deniers and admitters and the following variables: percentage of ideal body weight at presentation to treatment, outcome after one year as defined by the Morgan and Russell Scales, duration of symptoms before treatment, age of onset of the disorder, previous treatment experience, and termination rates or length of time spent in treatment.

Data analyses were conducted, and tested at the .05 level of significance, in order to answer the following research questions:

1. Deniers will have lower percentage of Ideal Body Weight at presentation to treatment, will have poorer outcome after one year, will have had a shorter duration of symptoms, will have had an earlier onset of the disorder than admitters, and will be more likely to terminate treatment earlier than admitters.
2. Deniers will be less likely than admitters to have had previous treatment for the disorder.

The following null hypotheses were formulated from the aforementioned research questions:

1. There is no difference between groups of deniers and admitters on percentage of Ideal Body Weight at presentation to treatment, on outcome after one year as defined by the Morgan and Russell Scales, on duration of symptoms, on age of onset of the disorder, or on amount of time spent in treatment.

2. There is no difference between deniers and admitters on previous treatment experience.

Research Findings

The number of cases for this study were 110. Forty one subjects were classified as deniers while 69 were admitters. Results indicated the subjects are described as follows. On the variable ideal body weight at intake to treatment, the deniers had a mean body weight of 76.4% ± 9.0%, and admitters mean ideal body weight was 76.5%, ± 8.8%. This is represented in Table 6.

Table 6

Ideal Body Weight at Intake by Deniers and Admitters

	Deniers (*N = 41*)		Admitters (*N = 69*)	
	Mean	SD	Mean	SD
%IBW at Intake	76.4	9.0	76.5	8.8

Mean termination rates or time spent in treatment for the deniers was 12.3 months ± 16.2, while the admitters averaged 16.2 months ±14.9 months. The deniers had a mean of 4.5 years ± 6.0 duration of the illness before they sought treatment, and the admitters had experienced the symptoms for 5.1 years ± 6.2. See Table 8.

Data collected on whether the patients had experienced prior treatment effort showed that 46.3% of the deniers versus 44.9% of the admitters reported no prior treatment; and that 53.7% of the deniers and 55.1% of the admitters acknowledged prior treatment.

Table 8

Months in Treatment and Duration of Illness by Deniers and Admitters

	Deniers (*N* = *41*)		Admitters (*N* = *69*)	
	Mean	SD	Mean	SD
Months in Treatment	12.3	16.2	16.2	14.9
Duration of Illness	4.5	6.0	5.1	6.2

Table 9

Prior Treatment and Outcome by Deniers and Admitters

	Deniers (*N* = *41*)	Admitters (*N* = *69*)
Prior Treatment		
Yes	46.3%	44.9%
No	53.7%	55.1%
	100%	100%
Outcome		
Good	34.1%	26.1%
Intermediate	31.7%	37.7%
Poor	34.1%	36.2%
	100%	100%

On the outcome measure, 34.1% of the deniers and 26.1% of the admitters had

'good' outcome; 31.7% of the deniers and 37.7% of the admitters had 'intermediate' outcome; and 34.1% of the deniers and 36.2% of the admitters had 'poor' outcome. Also indicated was that individuals having 'good' outcome represented 29.1% of the total group of patients. Those with 'intermediate' outcome represented 35.4% of the total patients investigated. Those with "poor' outcome made up 35.4% of the total subjects in the study. See Table 9 above for these data.

For hypothesis one, multivariate analysis of variance was used to look at ideal body weight at intake, outcome, duration of illness, age of onset of the illness, and length of treatment by denier/admitter status. The multivariate two-group test Hotelling's T^2 was used, and a full factorial model was generated for this problem. This analysis was thought to be more powerful than the use of univariate tests, because it is believed that, although the groups may not significantly differ on any of the variables individually, the variables in concert may reliably be able to differentiate the two groups. Additionally, fragmented univariate statistics would have greatly inflated the overall type 1 error rate (Stevens, 1986).

Results of the analysis indicate Hotelling's T^2 = .03299 for the overall model. This T^2 statistic is a comparison of between group variability to within group variability. The transformation of the Hotelling's T^2 yields an exact F distribution, where F (5,103) = .67964, p = .640. The null hypothesis was retained. There is no difference (at the .05 level) between the two groups on the five variables investigated. Although the F for the overall model was not significant, post hoc procedures were conducted using univariate F tests. This procedure was used over other post hoc analyses because it is thought to have greater power for detecting differences (Stevens, 1986). Results of the univariate tests are as follows: for the variable age of onset, F (1,107) =

.52021, p = .472; for percentage of ideal body weight at intake, F (1,107) = .00163, p = .968; for termination or months in treatment, F (1, 107) = .1.88166, p = .173; for outcome, F (1,107) = .30671, p = .581; and for duration of symptoms before seeking treatment, F (1,107) = .23333, p = .630. None of the univariate tests were significant, indicating the two groups, admitters and deniers, do not differ on any of the variables when tested separately.

For hypothesis two, a chi square test of independence was performed on the relationship between whether or not an individual had experienced prior treatment effort and their inclusion into one of the two groups, deniers and admitters. Statistically, the chi square was not significant; χ^2 = 0.0029, df = 1, p = 0.9569. This demonstrates that there is no statistically significant relationship between whether or not an individual has had prior treatment and his inclusion into either the denier or admitter groups.

Post Hoc Analyses

In order to test for possible differences between the two groups on demographic variables, post hoc analyses were conducted on marital status, birth order, educational level, occupational level, family history of an eating disorder, height, and age of menarche.

Chi square tests were performed on the variables marital status, birth order, educational level, occupational level, and family history of an eating disorder.

Results of the analyses were as follows. For the variable marital status, χ^2 = 1.4188, df = 3, p = 0.7011. For birth order, χ^2 = 3.7744, df = 4, p = 0.4374. For Educational level, χ^2 = 15.9644, df = 7, p = 0.0254. For occupational level, χ^2 = 1.5606, df = 2, p = 0.4583. For family history, χ^2 = 0.8646, df = 2, p = 0.6490. As shown, the chi square statistic was not significant for the variables marital status, birth

order, occupational level, and family history of an eating disorder. This demonstrates that there is no statistically significant relationship between the two groups on these variables. The chi square statistic for educational level, however, was statistically significant. The nature of the relationship was such that admitters were slightly more educated than the deniers. Specifically, the data revealed a larger percentage of the admitter group had high school diplomas and college degrees than the deniers. For the patterning of the data and expression as percentages, refer to Table 3, Chapter 3.

For height and age of menarche, one-way analysis of variance was used to compare group means on each variable. Results of the analyses are as follows. For height, F (1,108) = 1.4473, p = 0.2316. For age of menarche, F (1,108) = 0.1548, p = 6948. The null hypotheses were retained for these analysis. This demonstrates that the difference in means for the two groups on these variables are not statistically significant.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was designed to investigate the relationship between those anorectics termed deniers and admitters and ideal body weight at presentation to treatment, outcome after one year as defined by the Morgan and Russell Scales, duration of symptoms, age of onset of the disorder, whether or not they experienced prior treatment, and rates of termination or length of treatment.

The subjects in this study were 110 patients who have presented for treatment for anorexia nervosa at a clinic in the south central United States that specializes in eating disorders. Their diagnosis had been confirmed by a routine intake process at the clinic. The study population consisted of 69 anorectic individuals who obtained a psychological testing profile that was consistent with their diagnosis, called admitters, and 41 individuals who obtained profiles that were thought to represent denial. Data were collected from patient files at the clinic, from routine follow-up testing administered and filed, from hospital records when applicable, and from initial testing and questionnaires administered and filed.

The mean age of onset of the illness for the denier group was 16.9 years, and for the admitters it was 17.8 years old. Mean age of the deniers at presentation to treatment was 21.3 and for the admitters it was 22.9 years old. Ideal body weight at intake for the deniers was 76.4%, for the admitters it was 76.5%. Ideal body weight at one year for the deniers was 87.5%, for the admitters it was 85.4%. Termination rates or time spent in treatment for the deniers had mean of 12.3 months, while the admitters averaged 16.2 months. The deniers had a mean of 4.5 years duration of the illness before they sought treatment, and the admitters had experienced the symptoms for 5.1

years. Additional demographic data were collected as to age of onset of menstruation, marital status, birth order, level of education obtained at time of presentation to treatment, occupational level at time of presentation to treatment, height, and whether or not there is a family history of an eating disorder.

Two null hypothesis were formulated and tested at the .05 level of significance. Multivariate analysis of variance was used to test hypothesis one. A chi square test of independence was calculated for hypothesis two.

The following is a summary of the two null hypotheses and the results of the statistical analyses.

Null hypothesis one: There is no difference between groups of deniers and admitters on Ideal Body Weight at presentation to treatment, on outcome after one year as defined by the Morgan and Russell Scales, on duration of symptoms, age of onset of the disorder, or length of treatment.

Results of the MANOVA were not found to be statistically significant; therefore, the null hypothesis was retained.

Null hypothesis two: There is no difference between deniers and admitters on previous treatment experience. The chi square statistic was not significant, therefore the null hypothesis was retained.

Conclusions

The conclusions derived from the data reported in Chapter 4 were done so within the confines of the following limitations:

1. Only female patients were used.
2. When investigating termination or months of treatment for each group, it is not known whether this total represents a premature termination, a successful resolution of

the problem.

3. Data collected at one treatment facility may not be representative of all individuals who present with similar test results at other treatment facilities, thereby limiting the generalizability of the findings.

It would appear from the data collected that there is no statistical difference between the two groups, deniers and admitters, on the variables of percentage of ideal body weight at presentation to treatment, outcome after one year as defined by the Morgan and Russell Scales, duration of symptoms before treatment, age of onset of the disorder, rates of termination or length of treatment, or whether or not they experienced prior treatment. The data did indicate that the admitter group had more education.

Implications

From the results of the study, it would appear that there are no differences between deniers and admitters regarding the symptomatology investigated. This would mean that the two different groups will present to treatment and obtain differing psychological profiles on the EDI and the EDI-2. This study, however, implies that, although they present with differing attitudes and levels of initial disclosure, they do not significantly differ on their body weight at presentation to treatment. The outcome of the illness after one year as defined by the Morgan and Russell Scales will be similar also. Neither deniers nor admitters appear to differ on how long they have been sick before they seek treatment. Neither group differs on the age of onset of the disorder, nor whether they experienced prior treatment efforts. And lastly, it would appear that inclusion into either the denier or admitter group will not determine how long they will spend in treatment. In other words, it does not appear to make a difference on any of the variables discussed whether or not they initially present and deny eating disorder

symptomatology.

The results of the study have important clinical implications. Patients present to treatment for anorexia, and a good many of them will undergo psychological testing, especially if they are treated at clinics that specialize in eating disorders. A percentage of these will obtain a psychological profile that is thought to represent denial of eating disorder symptomatology. This study implies that these individuals will have similar outcomes to those who do not obtain this type of profile, and will have similar lengths of treatment. This will be especially useful when working with families and spouses (which is most often the case) who accompany the anorectic to intake and who are usually quite concerned about how the patient will fare. It is quite common to have families and spouses present during initial feedback session when discussing results of the psychological testing. This study can be used to help reassure the families suffering from anorexia that, although the patient is presenting with denial of symptomatology, they will be treated with the same sound methods as though they presented and freely admitted the problem. This also implies that prognosis or length of treatment will not be adversely affected by this initial presentation.

Although it is not thought to be adequately studied (Vanderdeycken & Vanderlinden, 1983), denial in anorexia nervosa has been reported and discussed in the professional literature for some time (see Chapter II). It has been discussed as a defense against change, a form of resistance as a response to a perceived threat, and a protective psychological maneuver (Crisp, 1967). Denial has also been discussed as a fear of vulnerability to a stranger's reality and possible value judgment, and embarrassment over being viewed as being unable to solve their own difficulties (Bruch, 1978, 1981). The present study would suggest, then, that the denial posturing at presentation might be a defensive mode as a way to cope, maneuver through, or circumvent what they are being

asked to consider when coming to treatment. The study also suggests that the denial might be a transient phase, or a lifeboat so to speak, used during a difficult time and on a journey fraught with fear and apprehension. This might speak to the good number of patients who are typically brought to treatment based on someone else's agenda. In other words, it may be partially explained as defensive posture to help the patient maintain some sense of integrity. The present study might even suggest that it is a phase that the anorectic experiences, it is defensive in nature, and possible expressed by all of them to some degree. It is possible that the deniers were representative of one end of the continuum. And, although denial is not an uncommon characteristic of the anorectic, it should be remembered that there are those who do present willingly to treatment, who self-initiate and are able to articulate their difficulties and needs. In any case, the present study provides information that whether or the anorectic presents to treatment with a any measurable denial, the outcome and length of treatment are similar. Additionally, it speaks well of modern treatment of anorexia. A good, comprehensive treatment regimen called for by the latest research using individual, couples, and family and group psychotherapy, pharmacologic intervention, and education can overcome initial denial and resistance.

It is believed that the data suggesting that the admitter group is more educated should be interpreted with caution. As this is a relatively small study, the data may not accurately describe this population. It is also possible that the data may be speaking to the fact that the admitter group's educational level may have made them more aware of their illness than the denier group. More education might possibly mean that this group had more exposure to the media and had more knowledge base on which to base their decisions about their illness and treatment. Additionally, those with more exposure to

higher education might very well choose a different line of defense or resistance than the denial used by the other group.

Recommendations

From the review of the literature, denial would seem to be an area of import in the study of anorexia nervosa, and one that will continue to present itself in clinical situations. It is believed, therefore, that future research in this area would be highly beneficial to the understanding and treatment of this difficult population. The following is recommended.

1. The study was done in the south central United States and may not be representative of all anorectics. Although the clinic serves a very large area and occasionally neighboring states, it is possible that a broader study might net different results. It is recommended that a multicenter study encompassing a broader range of patients be undertaken.

2. The study did not take into account whether or not the patients who presented for treatment were self-initiated. A study including this variable might be helpful.

3. Personality variables may have contributed to the patient's presenting demeanor during initial psychological inquiry. It is recommended that personality variables be included in a study of this type, i.e., what personality types or traits lend themselves more readily to this type of denial presentation.

4. The patients in the study were similar within each group on the inventory assessing their endorsement of presenting symptomatology. Future research might address other pathology that may positively correlate with the differing profiles, such as body image distortion.

5. There were family dynamics or variables that were not considered in this study. Although information on birth order and family history of eating disorder was obtained,

it was not an integral part of the study. These data and other family dynamics may contribute to the patient's initial presentation of denial. It is recommended that further study include family types, styles, or characteristics as rigidity or compulsivity.

6. Although length of treatment was investigated for the purpose of differences between deniers and admitters, this study did not investigate whether the patient had prematurely terminated or had successfully completed treatment. This study did not follow the patient's course of recovery. Although the study demonstrated that there was no significant differences between the two groups on the measure of outcome after one year, it is not known if they were at similar points in their recovery. It recommended that further research include these variables.

7. For the purpose of this study, the outcome was assessed after one year. It is possible that the two groups might differ after a longer period of time. It is recommended that further research elaborating on the study assess outcome at longer periods and at differing intervals of time.

8. Subjects of the study were all female patients. It would be beneficial to include male anorectics for future research in this area. Different measures of outcome would need to be constructed to use with a male population of anorectics.

9. Both restrictor and binge/purge type anorectics were used for the study. Further research would separate these two types to investigate differences in their presentation and inclusion into either the denier or admitter group, in behavior during initial psychological inquiry and testing, and differences in outcome and other variables.

10. Although not a focus of the study, data did reveal slight differences in educational levels of the two groups. It is recommended that this variable be included in further study.

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VITA

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Candidate for the Degree of

Doctor of Philosophy

Thesis: DENIAL AND ANOREXIA NERVOSA

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Biographical:

Personal Data: Born in Tulsa, Oklahoma, on March 13, 1955 the son of James E. and Catherine Odessa Pike.

Education: Graduated from Bishop Kelley High School, Tulsa, Oklahoma in May 1973; received Bachelor of Arts degree in Sociology from Oklahoma State University, Stillwater, Oklahoma, in December, 1985; received Master of Science degree in Applied Behavioral Studies (Community Counseling) in May, 1988 from Oklahoma State University; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in December, 1994.

Professional Experience: Tulsa Juvenile Bureau, Tulsa, Oklahoma, internship, May 1985 to September 1985; Oklahoma Department of Corrections, Tulsa, Oklahoma, volunteer program, spring, summer of 1986; Oklahoma Lion's Boy's Ranch, Perkins, Oklahoma, staff therapist, January 1986 to August, 1986; Stillwater Domestic Violence Service, Stillwater, Oklahoma, counselor, September 1986 to August 1990; Student Mental Health Clinic, Oklahoma State University, Stillwater, Oklahoma, practicum therapist, January 1988 to July 1989; July, 1989 to August, 1990; Director, Parent's Assistance Center, Stillwater, Oklahoma, July 1989 to August 1990; University Counseling Services, OSU, Stillwater, Oklahoma, practicum therapist, August, 1990 to August, 1991; Marriage and Family

Clinic, OSU, adjunct practicum, June, 1988 to August, 1988; January, 1990 to May, 1990; instructor for World of Work, September, 1988 to May, 1989; Educational Psychology, August 1990 to may 1991; Introduction to Counseling Practice, August 1990 to December 1990; Group Process, May 1990 to August, 1990; Sedgwick County Department of Mental Health, Wichita, Kansas, doctoral internship, August, 1991 to August, 1992; University of Kansas School of Medicine, Wichita, Kansas, post-doctoral position, August, 1992 to August, 1994.

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 06-15-94 **IRB#:** ED-94-017

Proposal Title: THE SIGNIFICANCE OF DENIAL IN ANOREXIA NERVOSA

Principal Investigator(s): Don Boswell, Theresa Johnson

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____ Date: June 24, 1994

Chair of Institutional Review Board